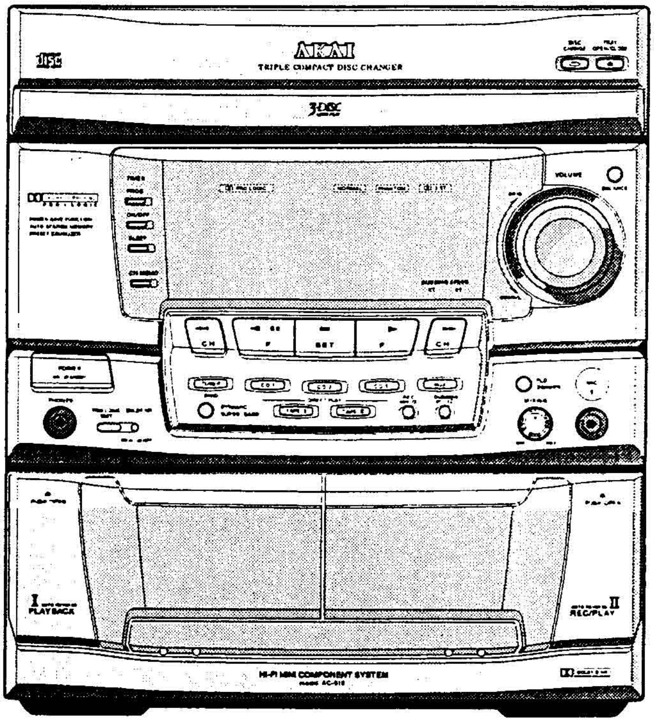
TX-410/610
(AC-410/413R/415K)
(AC-610/613R/615K)

AKAI SERVICE MANUAL



DOLBY B NR

COMPACT
disc
DIGITAL AUDIO

DOLBY SURROUND
PRO•LOGIC

MINI STEREO COMPONENT SYSTEM

MODEL AC-410/413R/415K
MODEL AC-610/613R/615K
MODEL SR-410

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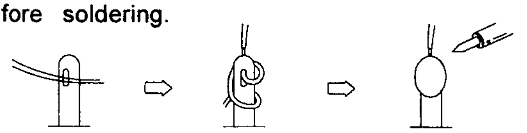
SAFETY INSTRUCTIONS

PRECAUTIONS DURING SERVICING

1. Parts identified by the ⚠ (*) symbol parts are critical for safety. Replace them only with parts whose numbers are specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation.
   These must also be replaced only with specified replacements.
   Examples: RF converters, tuner units, antenna selection switches, RF cables, noise-blocking capacitors, noise-blocking filters, etc.
3. Use specified internal Wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulating Tape
   2) PVC tubing
   3) Spacers (insulating barriers)
   4) Insulating sheets for transistors
   5) Plastic screws for fixing micro switches
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitor, etc.), wrap ends of wires securely about the terminals before soldering.



6. Make sure that wires do not contact heat generating parts (heat sinks, oxide metal film resistors, fusible resistors, etc.)
7. Check if replaced wires do not contact sharply edged or pointed parts.
8. Also check areas surrounding repaired parts.
9. Make sure that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

MAKE YOUR CONTRIBUTION TO PROTECT THE ENVIRONMENT

Used batteries with the ISO symbol for recycling as well as small accumulators (rechargeable batteries), mini-batteries (cells) and starter batteries should not be thrown into the garbage can.
Please leave them at an appropriate depot.

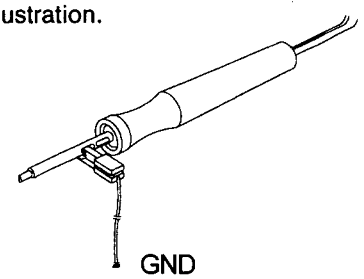
SAFETY CHECK AFTER SERVICING

After servicing, make measurements of leakage-current or resistance in order to check if exposed parts are acceptably insulated from the supply circuit.
The leakage-current measurement should be done between accessible metal parts, (such as chassis, ground terminal, microphone jacks, signal input/output connectors, etc.) and the earth ground through a resister of 1500 ohm paralleled with a 0.15 μ F capacitor, under the unit's normal working condition.
The leakage-current should be less the 0.5mA rms AC.
The resistance measurement should be done between accessible exposed metal parts and power cord plug prongs with the power switch "ON" (if included). The resistance should be more than 2.2Mohms.

PRECAUTIONS IN REPAIRING

When repairing or adjusting the unit, please note the following points

1. Do not put excessive pressure on the mechanical part (operation part), including the pick-up block, as extremely high mechanical precision is required in these parts.
2. When the base is removed for repair or adjustment. Make sure that there are no metal objects between the P.C board or the mecha parts and the base.
3. The Micro-Computer and the CD signal processing ICs may be damaged by static electricity or leakage from a soldering iron during repairing. While soldering, please take the precautions against leakage as in the illustration.



4. Do not loosen any screws in the pick-up block. Please refer to NOTE when replacing the pick up block.
5. To avoid hazardous invisible Laser Radiation, do not look at the Laser Beam (Objective lens) directly.
6. On model for some countries, laser warning labels are affixed on and inside of the unit as shown below. For your safety, read these labels carefully before repairing or adjusting the unit.

CAUTION

The use of controls or adjustments or the performance of procedures other than those specified herein may result in hazardous radiation.

[EUROPE, SCANDINAVIA, UK and AUSTRALIA]

CLASS 1	LASER PRODUCT
KLASSE 1	LASER PRODUKT
LUOKAN 1	LASER LAITE
KLASS 1	LASER APPARAT

Label affixed on the rear panel of the unit

CAUTION: INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCK DEFEATED, AVOID EXPOSURE TO BEAM

ADVARSEL: USYNLIG LASERSTRÅLING VED ÅBNING. SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDÆTTELSE FOR STRÅLING.

VARO: AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLA LASERSÄTELYLLE

ÄLÄ KATSO SÄTEESEEN!

VARNING: OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN!

Label affixed on the CD MECHA BLOCK

INFORMATION

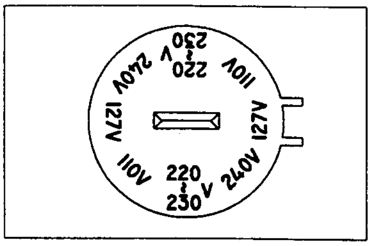
SYMBOLS FOR PRIMARY DESTINATION

Alphabet indicates the destination of the units as listed below.

Symbol	Principal Destination
A	USA
B	UK
E	Europe (except, UK)
S	Australia
V	Germany
U	Universal
Y*	Custom version

VOLTAGE CONVERSION(U Y Model only)

Before connecting the power cord, set the VOLTAGE SELECTOR located on the rear panel of the AC-415K/615K so that the correct voltage for your area is indicated.



[U5,U8, Y6, Y7]

TEST MODE

Various kind of test modes are installed in this unit's microcomputer in order to test them on the production line. Following test modes among the various test modes can be used for adjustment, operation check or maintenance. To terminate the test mode, simply press the "POWER ON/STANDBY " button or disconnect the AC power cord from the AC outlet.

1. DECK TEST MODE

This test mode can be used for tape speed adjustment as well as bias oscillator frequency adjustment in TAPE DECK section.
While pressing and holding the "TAPE II" and "▶" (F) buttons, connect the AC power cord to AC outlet. The function turns to "TAPE I" and "DUBX1" as well as " I ▶", "II ▶" tape direction indicators on the FLD light when this mode is engaged.

2. DECK CLEANING MODE

This test mode can be used for cleaning of the TAPE DECK mechanism.
Because, this mode enables engaging of the playback, fast forward (FF), and rewind (RWD) modes without a cassette tape, it makes the cleaning (such as the capstan shaft, magnetic head, pinch roller etc.,) easier.
While pressing and holding the "TAPE I" and "▶" (F) button, connect the AC power cord to the AC outlet. The "TAPE I", "I ▶", "II ▶" tape direction indicators on the FLD light when this mode is engaged.

SPECIFICATIONS

[Tuner Section]

Frequency range

FM	87.5-108MHz(50KHz step)
MW	530-1710KHz(U8) 531-1602KHz (except U8)
LW	144-288KHz(1KHz step) (E1/E3/B1 only)
SW	3.8-12.5MHz(5KHz step) (Y7 only)

USABLE SENSITIVITY

FM	16.2dBf IHF,3%THD (except E1/E3/B1) 20.2dBf IHF,3%THD (E1/E3/B1)
MW	500uV/m
LW	800uV/m
SW	800uV/m

S/N Ratio(IHF)

FM	MONO 75dB, STEREO 65dB
MW	40dB
LW	30dB
SW	30dB
Stereo separation	40dB(at 1KHz)

[AMPLIFIER Section]

Power output	(AC-410/413R/415K) 25W+25W(6ohms, 10%THD, EIAJ) 20W+20W (6ohms, 1%THD, DIN) (AC-610/613R/615K) 30W+30W(6ohms, 10%THD, EIAJ) 25W+25W (6ohms, 1%THD, DIN)
Input sensitivity (AUX IN)	310mV/47KΩ
channel separation	70dB
Frequency response	10Hz-100KHz(-3dB)

[DECK SECTION]

Track system	4track, 2channel system
Frequency response	40Hz-15KHz (Normal tape, +3dB/7dB) 40Hz-16KHz(Cro2 tape, +3dB/-7dB)
Wow & Flutter	0.09% (WRMS), 0.15%(DIN)
S/N ratio	Dolby B 63dB (5KHz) Dolby off 53dB (Cro2 tape)
Total harmonic distortion	less than 0.5%(normal tape at 315Hz)
Channel separation	43dB

[CD SECTION]

Pick up system	3Beam Laser
Sampling frequency	44.1KHz
Error correction system	Cross interleave read solomon
Number of channels	2Channe
Frequency response	20Hz-20KHz
Wow & Flutter	Below measurable limits
S/N ratio	83dB
Total harmonic distortion	0.035% (at 1KHz)
Channel separation	73dB(at 1KHz)
Dynamic range	82dB (at 1KHz)

[GENERAL]

Power requirement	
E1/E3/B1/S1	AC 220-230V/50Hz
U5/U8/Y6/Y7	AC110/127/220-230/240V, 50/60Hz
Power consumption	80W/AC-410/413R/415K, 130W/AC-610/613R/615K
Weight	7.3Kg/AC-410/413R/415K, 8.2Kg/AC-610/613R/615K

[SPEAKER SECTION]

ITEM	SR-410
System Constructions	3-way 3-speakers
Woffer Unit	135mm Cone type
Midrange Unit.	57mm Cone type
Tweeter Unit	20mm dome type (piezo)
System Impedance	6Ω
Maxium Power Input	50w
Sensitivity	more than 87dB/w/m
Frequency Response	60Hz-20KHz
Harmonic Distortion	less than 3%
Enclosure Type	bass reflex type
Units Layout	L/R mirror layout
Dimensison	193(W)X305(H)X245.5(D)
Net Weight	3.3Kg/pc

For improvement purposes, specifications and design are subject to change without notice.
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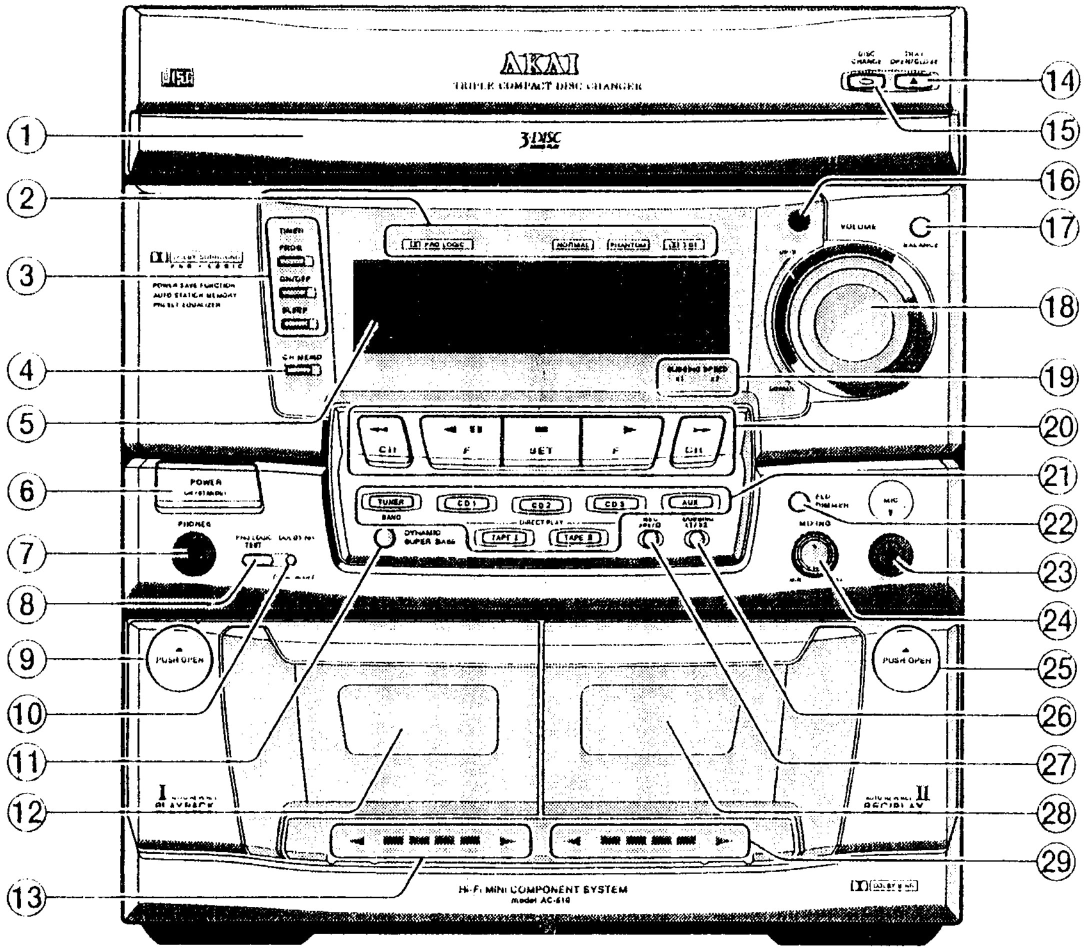
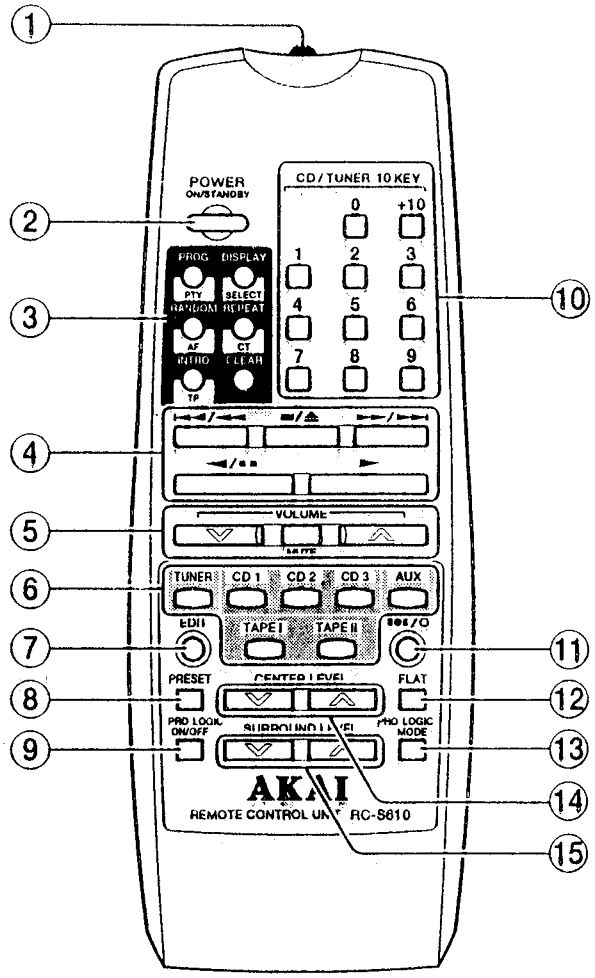
CONTROLS

A MAIN UNIT


AKAI
TRIPLE COMPACT DISC CHANGER
3 DISC
TIMER
PROG
ON/OFF
SLEEP
CH MEMO
PRO LOGIC
NORMAL
PHANTOM
VOLUME
BALANCE
DUBBING SPEED
CH
SET
POWER
TUNER
CD 1
CD 2
CD 3
AUX
TAPE I
TAPE II
DYNAMIC SUPER BASS
PHONES
MIXING
MIC
PUSH OPEN
I
II
Hi-Fi MINI COMPONENT SYSTEM
model AC-610
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29

1. Disc tray
2. Dolby PRO LOGIC mode indicators (AC-610/613R/615K)
3. TIMER operation buttons
4. CH MEMO button
5. System FL display
6. POWER ON/STANDBY button
7. PHONES jack
8. PRO LOGIC TEST button (AC-610/613R/615K)
9. Tape deck I PUSH OPEN button
10. DOLBYNR button
11. DYNAMIC SUPER BASS button
12. Tape deck I cassette compartment
13. Tape deck I direction indicator and transportation indicator
14. TRAY OPEN/CLOSE button
15. DISC CHANGE button
16. Remote sensor
17. BALANCE button
18. Volume control
19. DUBBING SPEEDx1, x2 indicators
20. Multi-function buttons
21. Input source select buttons
22. Dimmer button (AC-410/413R/610/613R)
    KARAOKE button (AC-415K/615K)
23. MIC jack
24. Mixing control
25. Tape deck II PUSH OPEN button
26. DUBBINGx1/x2 button
27. REC button
28. Tape deck II cassette compartment
29. Tape deck II direction indicator and transportation indicator

B Remote Control


①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
⑪
⑫
⑬
⑭
⑮
POWER
ON/STANDBY
CD / TUNER 10 KEY
0
+10
1
2
3
4
5
6
7
8
9
PROG
DISPLAY
PTY
SELECT
RANDOM
REPEAT
AF
CT
INTRO
CLEAR
TP
VOLUME
MUTE
TUNER
CD 1
CD 2
CD 3
AUX
EDIT
TAPE I
TAPE II
PRESET
CENTER LEVEL
FLAT
PRO LOGIC ON/OFF
SURROUND LEVEL
PRO LOGIC MODE
AKAI
REMOTE CONTROL UNIT RC-S610

When using the remote control for operation, make sure that it is pointing to the remote sensor window on the main unit.

1. Transmitting window
2. POWER ON/STANDBY button
3. CD operation buttons/RDS buttons
   (The RDS function is only available on
   the AC-413R/613R)
4. Multi-function buttons
5. VOLUME buttons
6. Input source select buttons
7. EDIT button
8. PRESET button
9. PRO LOGIC ON/OFF button
10. CD/TUNER 11 KEY buttons
11. Rec/pause button
12. FLAT button
13. PRO LOGIC MODE button
14. CENTER LEVEL buttons
15. SURROUND LEVEL buttons

* The 9, 13, 14 and 15 buttons are not included on the RC-S510 remote control (for AC-410/413R/415K model operation).

Note:

The remote control can not be used for some functions that require the combined pressing of two tape transportation buttons (intro scan or auto play for example). Please Use the Main unit's multi-function buttons for the operation of such functions.

I. DISASSEMBLY

1-1. REMOVE OF MAIN COVER

1) Remove the seven screws on back and six screws on both sides.
2) Remove the MAIN COVER

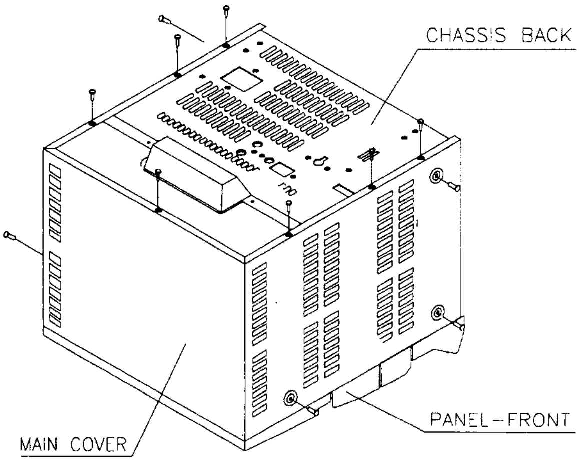

CHASSIS BACK
PANEL-FRONT
MAIN COVER

Fig. 1-1

1-2. REMOVE OF CD MECHA & FRONT PANEL

1) Remove the CD door
2) Remove the four screws (A) on both sides and disconnect three connectors and the flat cable from the TC-DK P.C.B.
3) Remove the CD player block
4) Remove the three screws (B) and two screws (C) on both sides.
5) Remove the FRONT PANEL

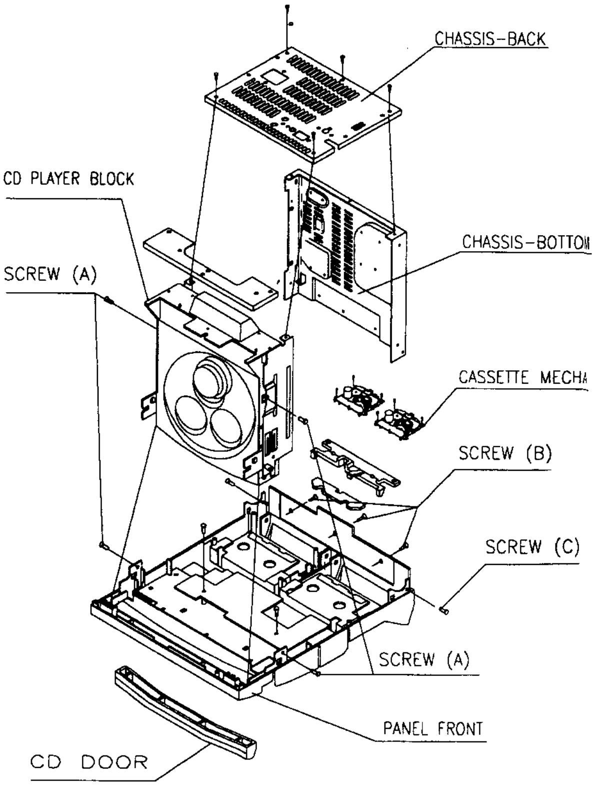

CHASSIS-BACK
CD PLAYER BLOCK
SCREW (A)
CHASSIS-BOTTOM
CASSETTE MECHA
SCREW (B)
SCREW (C)
SCREW (A)
PANEL FRONT
CD DOOR

Fig. 1-2

II. PRINCIPAL PARTS LOCATION

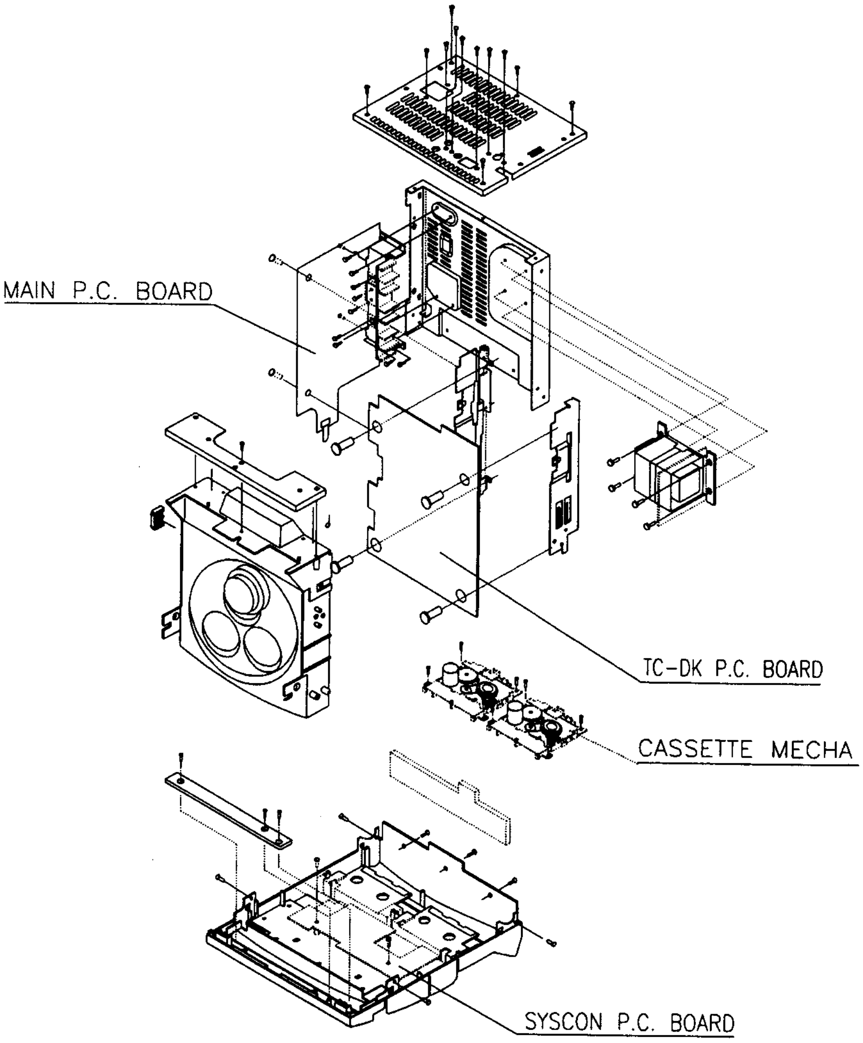

MAIN P.C. BOARD
TC-DK P.C. BOARD
CASSETTE MECHA
SYSCON P.C. BOARD

Fig. 2-1

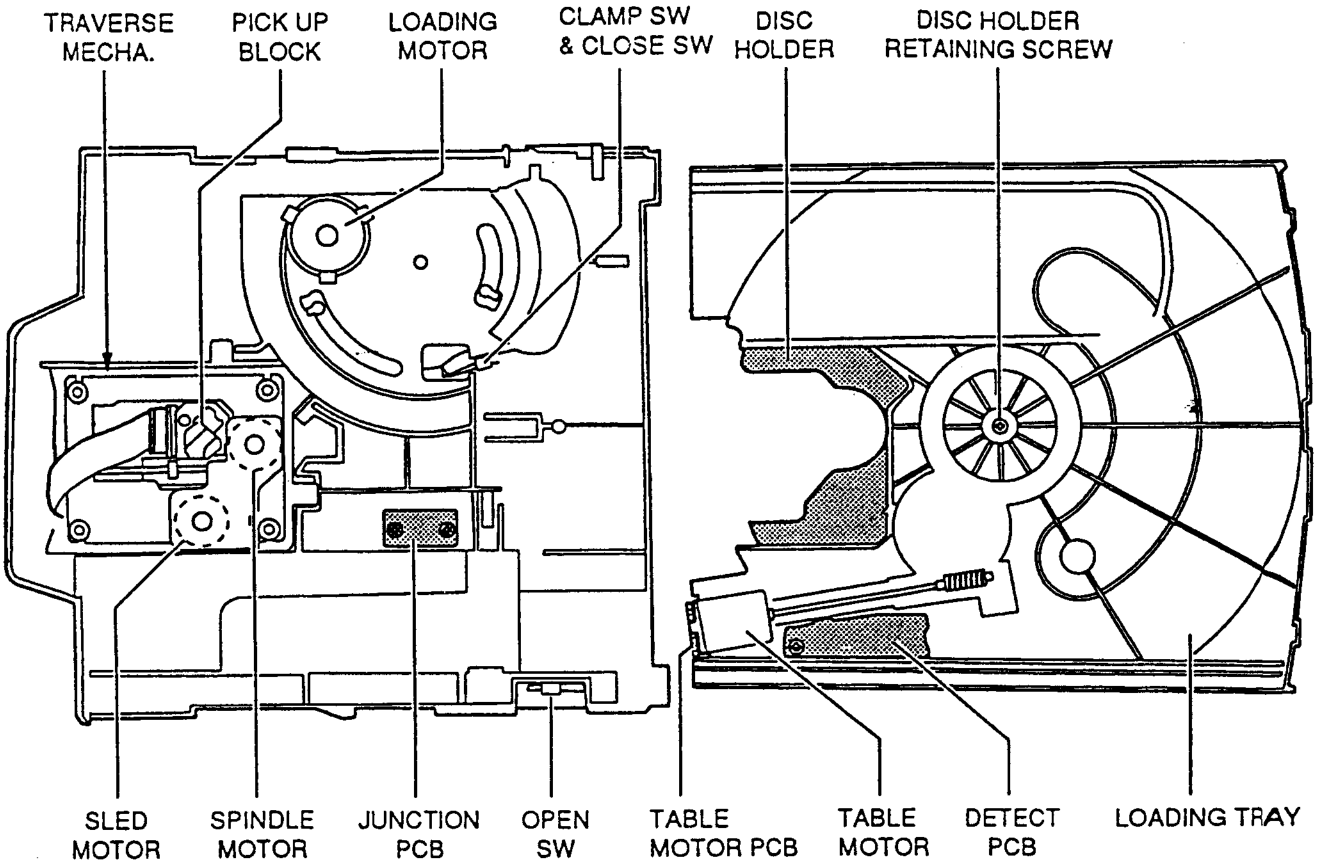

TRAVERSE MECHA.
PICK UP BLOCK
LOADING MOTOR
CLAMP SW & CLOSE SW
DISC HOLDER
DISC HOLDER RETAINING SCREW
SLED MOTOR
SPINDLE MOTOR
JUNCTION PCB
OPEN SW
TABLE MOTOR PCB
TABLE MOTOR
DETECT PCB
LOADING TRAY

Fig. 2-2 CD PIAYER BLOCK

III. DISASSEMBLY OF THE MAIN COMPONENTS

3-1. CD PLAYER BLOCK

* Remove the CD PLAYER BLOCK before proceeding.

3-1-1. Removal of the TRAVERSE MECHA.

1) Remove the TRAVERSE COVER by releasing the two tabs in the direction of the arrow as shown in Fig. 3-1.

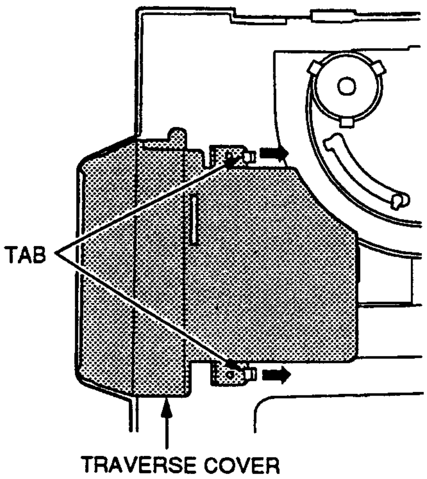

TAB
TRAVERSE COVER

Fig. 3-1

2) Short the circuit on the PICK UP BLOCK with solder as shown in Fig. 3-2.

Note : To protect the laser diode from damage caused by high voltage static electricity, a part of the PCB on the PICK UP BLOCK has to be shorted before disconnecting the connectors. After replacement, be sure to connect the two connectors and then remove the solder of the shorted circuit before turning the power ON.

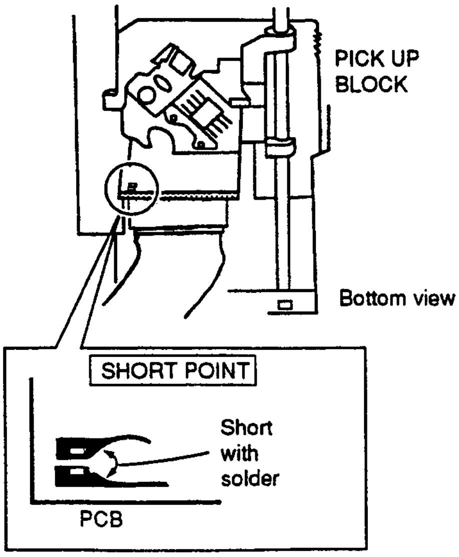

PICK UP
BLOCK
Bottom view
SHORT POINT
Short
with
solder
PCB

Fig. 3-2

3) Disconnect the two connectors carefully.

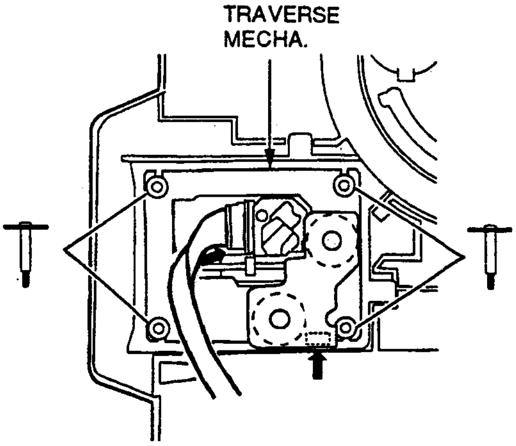

TRAVERSE
MECHA.

Fig. 3-3

4) Remove the four retaining screws, then remove the TRAVERSE MECHA.
5) Proceed in the reverse order for installation but never unsolder the shorted circuit before connecting the three connectors.

3-1-2. Replacement of the SLED MOTOR

1) Remove the TRAVERSE MECHA (refer to section 3-1-1).
2) Unsolder the leads of the SLED and SPINDLE MOTORs then remove the MOTOR PCB.

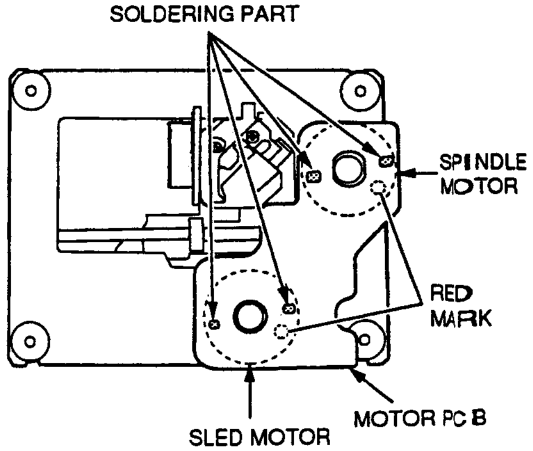

SOLDERING PART
SPINDLE
MOTOR
RED
MARK
MOTOR PCB
SLED MOTOR

Fig. 3-4

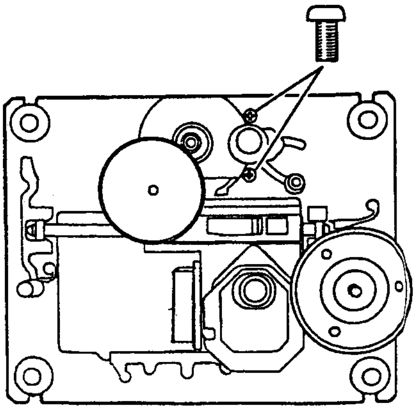


Fig. 3-5

3) Remove the two retaining screws, then remove the SLED MOTOR.
Next, extract the plastic gear from the motor shaft and attach it onto the new motor's shaft.
4) Reassemble in the reverse order.

About the SPINDLE MOTOR:
Replacement of the SPINDLE MOTOR itself is not recommended, because adjustment of the TURN TABLE height is quite critical and requires the use of a special jig.

3-1-3. Replacement of the PICK UP BLOCK

1) Remove the TRAVERSE MECHA (refer to section 3-1-1).
2) While pressing the Ⓐ stopper upwards, pull the SLIDE SHAFT to the right to remove the PICK UP BLOCK, then replace the PICK UP BLOCK.

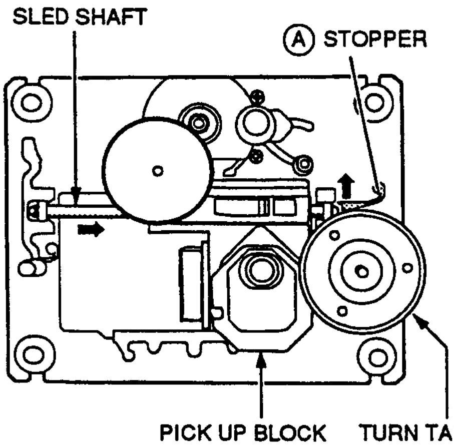


Fig. 3-6

3) Reassemble in the reverse order.

3-1-4. Replacement of the LOADING MOTOR

1) Slide the protruding part of the GEAR HOLDER PART in the direction of the arrow, then pull out the TRAY BLOCK.

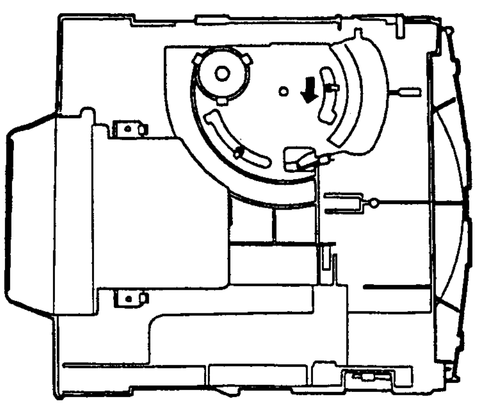


Fig. 3-7

2) Unhook the LOADING BELT with tweezers.

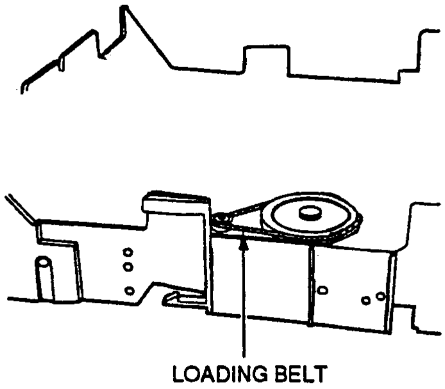


Fig. 3-8

3) Unsolder the lead wires of the LOADING MOTOR with a soldering iron.
4) While releasing the LOADING MOTOR's three retaining hooks, push the motor pully part down with your middle finger to remove the LOADING MOTOR, then replace it.

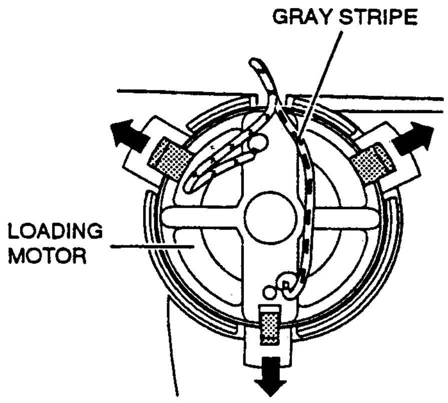


Fig: 3-9

5) Reassemble in the reverse order. Make sure that the wire with the gray stripe is connected to the motor's O marked terminal when soldering.

3-1-5. Removal of the TRAY BLOCK

1) If the TRAY BLOCK is in the "in" position, slide the protruding part of the GEAR HOLDER PART in the direction of the arrow and pull out the TRAY BLOCK slowly (refer to Fig. 3-7).
2) In order to disengage the two stoppers, carefully press the Ⓐ part of the TRAY BLOCK downwards while pulling the TRAY BLOCK out as shown in Fig. 3-10.

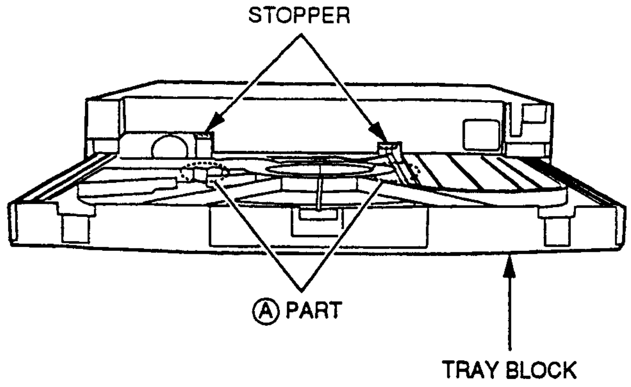

STOPPER
Ⓐ PART
TRAY BLOCK

Fig. 3-10

4) Remove the TRAY BLOCK by pulling it out carefully.
5) Reassemble in the reverse order for installation. When reattaching the TRAY BLOCK to the chassis, carefully align the guides on both sides of the TRAY BLOCK with their corresponding rails on the chassis. Also, make sure that any one of the reference marks on the DISC HOLDER aligns with the reference mark on the LOADING TRAY.

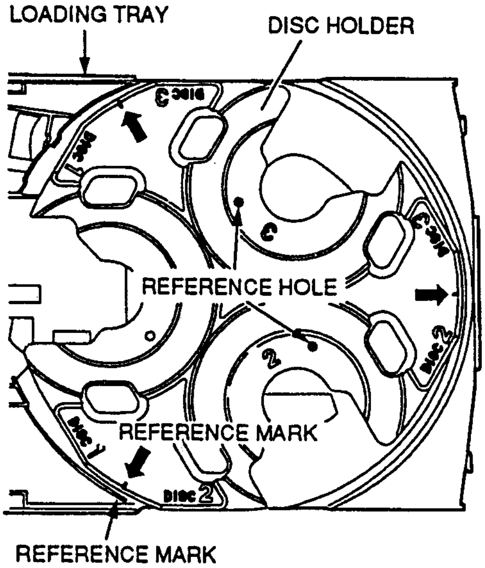

LOADING TRAY
DISC HOLDER
REFERENCE HOLE
REFERENCE MARK
DISC 2
REFERENCE MARK

Fig. 3-11

Next, move the head of the GEAR HOLDER PART in the direction of the arrow before engaging the stoppers as shown in Fig. 3-12.

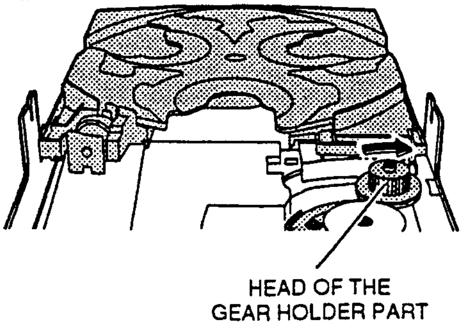

HEAD OF THE
GEAR HOLDER PART

Fig. 3-12

3-1-6. Replacement of the TABLE MOTOR

1) Remove the TRAY BLOCK (refer to section 3-1-5).
2) Remove the DISC HOLDER retaining screw then remove the DISC HOLDER.

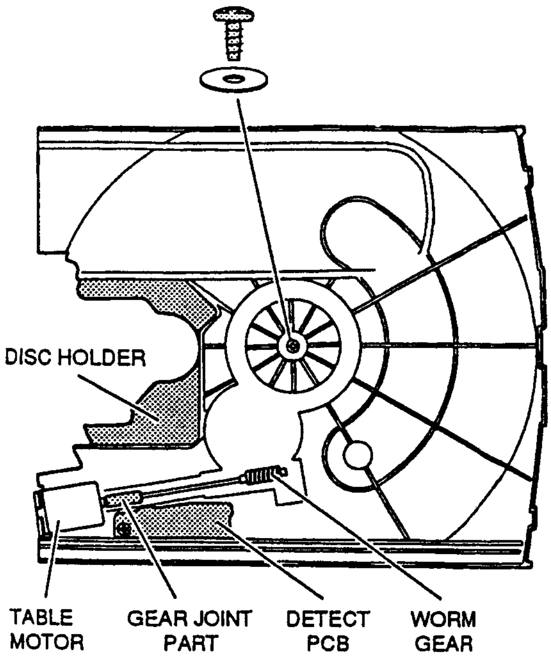

DISC HOLDER
TABLE MOTOR
GEAR JOINT PART
DETECT PCB
WORM GEAR

Fig. 3-13

3) Unsolder the leads of the TABLE MOTOR and remove the TABLE MOTOR PCB.

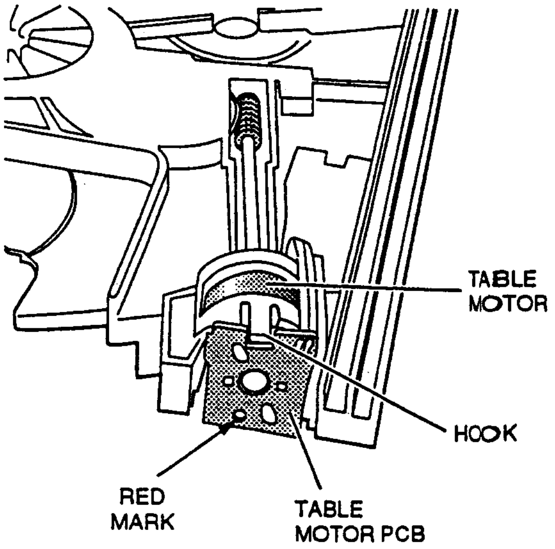


TABLE MOTOR
HOOK
RED MARK
TABLE MOTOR PCB

Fig. 3-14

4) Remove the TABLE MOTOR by pulling it out while opening the TABLE MOTOR retaining hook. Next, remove the WORM GEAR BLOCK by pulling the GEAR JOINT PART out and attach it to the new motor as shown in Fig. 3-13.
5) Reassemble in the reverse order.
   - When soldering the TABLE MOTOR PCB on the TABLE MOTOR, the TABLE MOTOR's red mark must be visible through the hole on the TABLE MOTOR PCB.
   - When attaching the DISC HOLDER on the LOADING TRAY, make sure to place the DISC HOLDER so that any one of the three reference marks aligns with the reference mark on the LOADING TRAY (any two reference holes on the DISC HOLDER align with the corresponding reference holes on the LOADING TRAY accordingly). (Refer to Fig. 3-11)

3-2. TAPE-I & TAPE-II MECHANISM BLOCK

3-2-1. Removal of the MECHANISM BLOCK

1) Remove the FRONT PANEL BLOCK.
2) Remove the four screws for each of the TAPE-I and TAPE-II MECHANISM BLOCKs then remove the MECHANISM BLOCKs from the FRONT PANEL BLOCK.

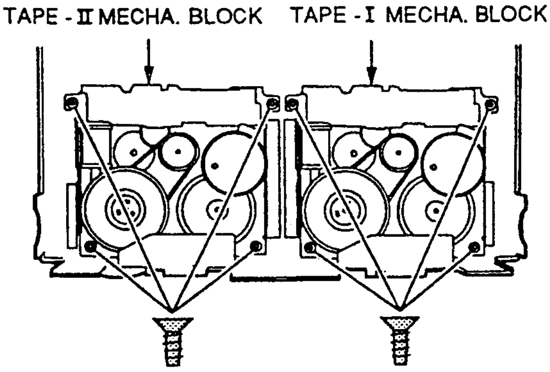


Fig. 3-15

3-2-2. Replacement of the CAPSTAN MOTOR

NOTE : After replacement, tape speed adjustment must be performed.

1) Unsolder the flat cable on the CAPSTAN MOTOR with a soldering iron.
2) While pressing the INTER-LOCK LEVER in the direction of the arrow, remove the two Ⓑ screws and then remove the CAPSTAN MOTOR.

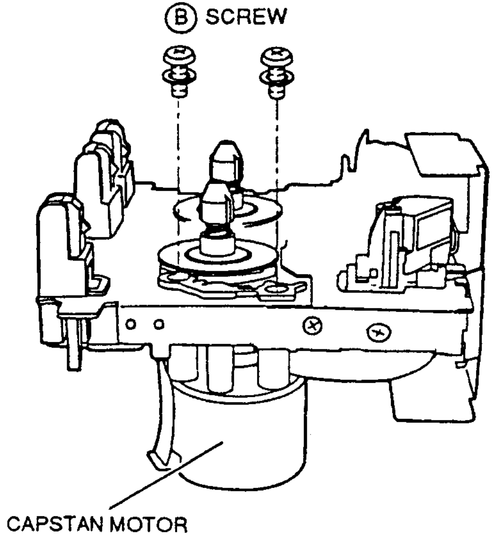


Fig. 3-16

3) Install a new motor and re-assemble in the reverse order for installation.

3-2-3. Replacement of the FR BELT

1) Unthread the MAIN BELT and replace the FR BELT as shown in Fig. 3-17.
2) Proceed in the reverse order for installation.

3-2-4. Replacement of the MAIN BELT

1) Remove the CAPSTAN MOTOR
2) Replace the MAIN BELT and re-assemble in the reverse order for installation.

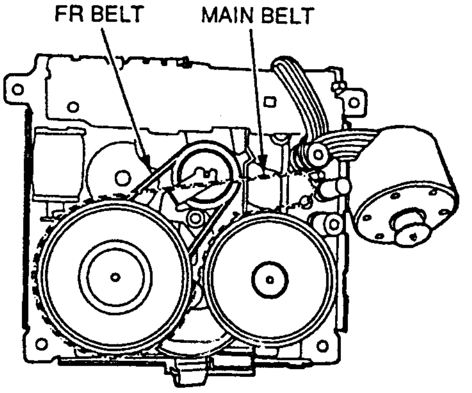


Fig. 3-17

3) After replacement, check the tape speed and if the result is not satisfactory, tape speed adjustment must be performed.

3-2-5. Replacement of the PINCH ROLLER BLOCK

1) Extract the PINCH ROLLER BLOCK upwards while releasing the pinch roller retaining hook in the direction of the arrow.

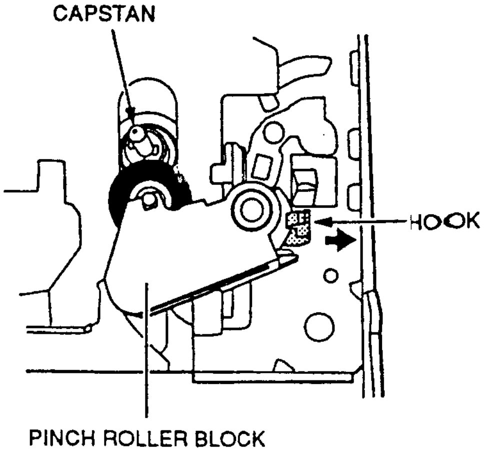


Fig. 3-18

2) Replace the PINCH ROLLER BLOCK and re-assemble in the reverse order. Attach the spring in the correct position when placing the PINCH ROLLER BLOCK.

3-2-6. Replacement of the PB HEAD OR REC/PB HEAD

1) Remove the two Ⓐ screws and remove the HEAD SHIELD PLATE.

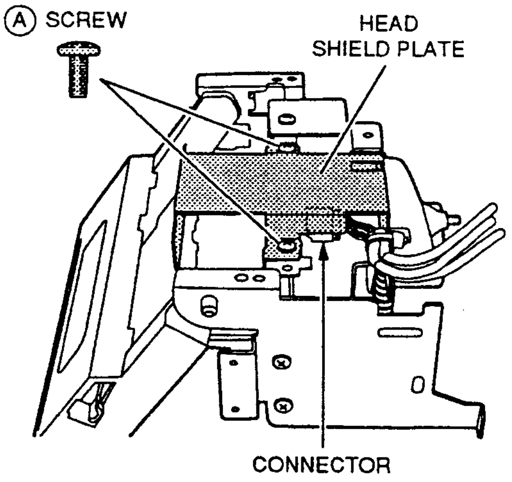

Ⓐ SCREW
HEAD SHIELD PLATE
CONNECTOR

Fig. 3-19

2) Disconnect the connector on the CONNECTOR PCB and remove the PCB retaining screw.

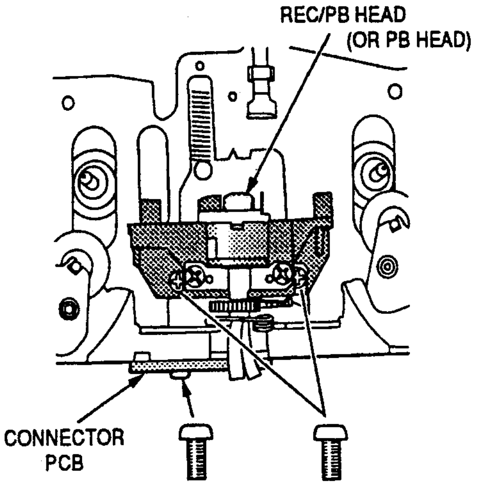

REC/PB HEAD
(OR PB HEAD)
CONNECTOR PCB

Fig. 3-20

3) Remove the two head retaining screws and remove the HEAD BLOCK.
4) Reassemble in the reverse order. After replacement, demagnetize the HEAD then perform head azimuth adjustment.

IV. MECHANICAL ADJUSTMENT

4-1. ADJUSTMENT OF THE HEAD AZIMUTH ALIGNMENT

1) Connect an oscilloscope to the L-ch and R-ch speaker terminals of the unit. Set the VOLUME control on the FRONT PANEL at the appropriate level (ie, the output level is not too low or too high).
2) Play back a 10 kHz (–15 dB), HEAD AZIMUTH ALIGNMENT TEST TAPE (TF-106CH) then adjust the HEAD AZIMUTH ALIGNMENT Ⓐ (FWD PLAY) and Ⓑ (REV PLAY) SCREWs respectively so that the waveform level of both the L-ch and R-ch are at maximum and also they are in the same phase in both FWD and REV directions. (Use a sharp edge philips type screwdriver that is de-magnetized for adjustment.)
   Perform the adjustment on both the TAPE-I and TAPE-II heads if necessary.

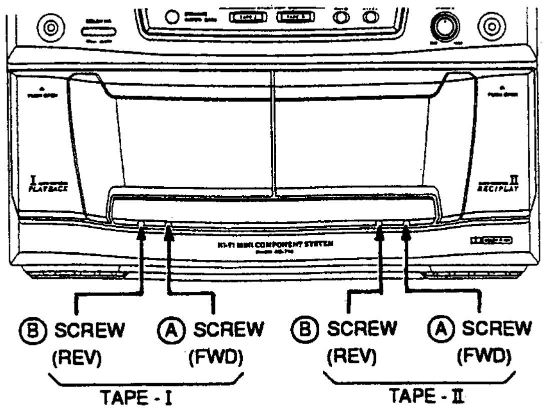


Fig. 4-1

V. ELECTRICAL ADJUSTMENT

5-1. TAPE DECK SECTION

NOTE :

1) The following adjustment should be performed in the "DECK test mode".
   To engage the DECK test mode, connect the AC power cord to the AC outlet while pressing the "TAPE-II" and "▶ (F)" buttons together.
   When the "DECK test mode" is engaged, the "DUBX1" indicator on the FL display will light.
2) When performing the tape speed adjustment, observe the following notes.
   - Adjustment should be started more than 30 seconds after the power is switched ON.
   - Adjustment should be made on X2 speed mode first then adjust the normal speed mode.
   - Adjustment should be made in the forward direction.
3) To disengage the "DECK test mode", press the "POWER" button or unplug the AC power cord from the AC outlet.

STEP	ADJUSTMENT
	1. Test tape/input signal 2. Mode 3. Check point, adjustment part 4. Remarks (•) and result (✻)

Adjustment Part →

Test Point - - - →

1 TAPE-I (X2) TAPE SPEED

1. 3,150 Hz test tape (TF-110CT)
2. TAPE-I, PLAY
3. TP-R.OUT, VR3100
4. • Connect a frequency counter to the TP-R.OUT (or L.OUT) and press the "DUBBING" button to engage double speed.
   ✻ 6,340 ± 20 Hz

2 TAPE-I NORMAL TAPE SPEED

1. 3,150 Hz test tape (TF-110CT)
2. TAPE-I, PLAY
3. TP-R.OUT, VR3101
4. • Connect a frequency counter to the TP-R.OUT and press the "▶ (F)" button again to resume normal tape speed.
   ✻ 3,150 ± 10 Hz

3 TAPE-II (X2) TAPE SPEED

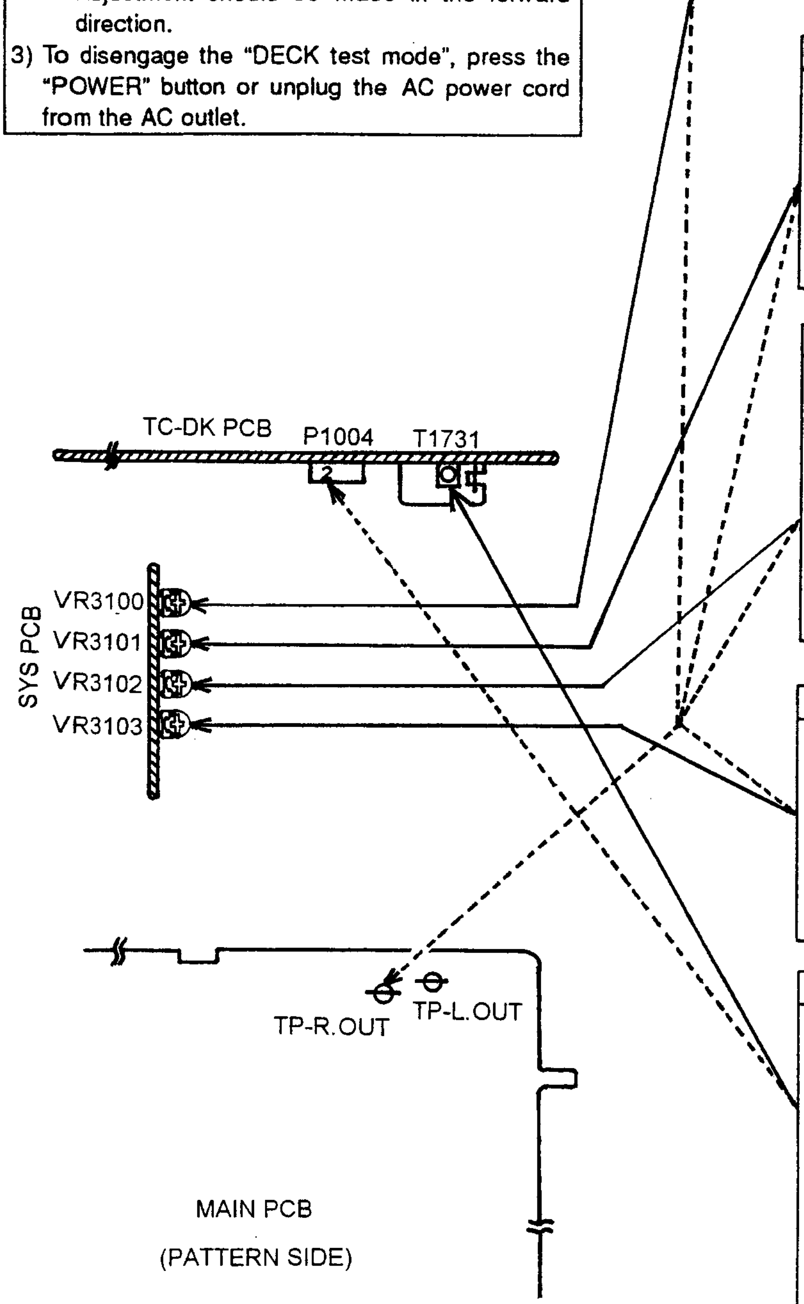
1. 3,150 Hz test tape (TF-110CT)
2. TAPE-II, PLAY
3. TP-R.OUT, VR3102
4. • Press the "TAPE-II" button and play back the test tape.
   • Connect a frequency counter to the TP-R.OUT and press the "DUBBING" button to engage double speed.
   ✻ 6,320 ± 20 Hz

4 TAPE-II NORMAL TAPE SPEED

1. 3,150 Hz test tape (TF-110CT)
2. TAPE-II, PLAY
3. TP-R.OUT, VR3103
4. • Connect a frequency counter to the TP-R.OUT and press the "▶ (F)" button again to resume normal tape speed.
   ✻ 3,140 ± 10 Hz

5 BIAS OSC FREQUENCY

1. CrO2 type blank tape
2. TAPE-II, REC
3. P1004 ② pin, T1731
4. • Connect a frequency counter between P1004 pin and GND. (10 : 1 probe should be used to avoid affecting the measurement.)
   • Start a recording (press the "REC" button then press the "▶" button).
   The "AUX" source indicator appears automatically.
   ✻ 100.0 ± 0.2 kHz



5-2.CD PLAYER SECTION

TEST MODE FOR CD PLAYER'S OPERATION

Some adjustments of the CD PLAYER section are automatically carried out by the micro computer.

If the CD player section is defective and it is necessary to partially check the operation, "CD TEST" mode can be used while repairing.

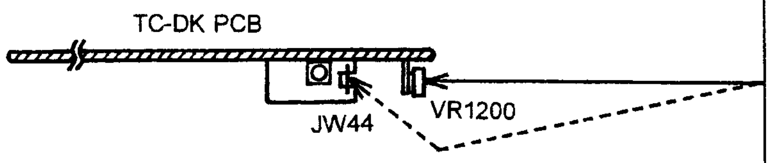
Engaging the "CD TEST" MODE

While pressing and holding both the "CD1" and "▶(F)" buttons, plug in the AC power cord to the AC outlet.

Note :

- During "CD TEST" mode, only the DISC"1" ▲ open/close button can be used for loading. So, place a disc on "TRAY 1".
- Proceed testing by pressing the "CD1" button once for each testing step.
- To disengage the "CD TEST" mode, press the "POWER ON/STANDBY" button or disconnect the AC power cord from the AC outlet.

DISPLAY	FUNCTION
T0 (TEST-0)	Initial condition of the "CD TEST" mode.
T1 (TEST-1)	Perform "focus search".
T2 (TEST-2)	Turn on the "focus servo".
T3 (TEST-3)	Mode of the "E-F balance" adjustment.
T4 (TEST-4)	E-F balance adjustment is carried out automatically and its data value is displayed on the FLD.
T5 (TEST-5)	Mode of the "Tracking gain" adjustment.
T6 (TEST-6)	Tracking gain adjustment is carried out automatically and its data value is displayed on the FLD.
T7 (TEST-7)	Normal playback mode is engaged.



1	FOCUS OFFSET
1.	Test disc (SONY TYPE-III)
2.	Play back
3.	JW44 and VR1200
4.	Connect the hot side probe of an AC milivoltmeter to JW44 on the BIAS OSC PCB and GND side probe to the chassis. Adjust the VR1200 on the TC-DK PCB until indication of the AC milivoltmeter is maximum.

VI. PARTS LIST

ATTENTION

1. When placing an order for parts, be sure to list the part No., Model No. and the description of each part. Otherwise, the nondelivery of the part or the delivery of a wrong part may result.
2. Please make sure that part No. is correct when ordering.
   If not, a part different from the one you ordered may be delivered.
3. Since the parts shown in parts list of preliminary service manual may have been the subject of changes, please use this parts list for all future reference.

[NOTE]

1. This parts list lists those parts which are considered necessary for repairs. Other common parts, such as resistors and capacitors, are listed in the "Common List for Service Parts" from which these parts should be selected and stocked.
2. The Recommended Spare Parts list shows those parts in the parts list which are considered particularly important for service.
3. Parts not shown in the parts list and "Common List for Service Parts" will not in principle be supplied.

WARNING

⚠ (*) INDICATED SAFETY CRITICAL COMPOMETS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS.

AVEERTISSEMENT

⚠ (*) IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ POUR MAINTENIR LE DEGRÉ DE SÉCURITÉDE L'APPAREIL, NE REMPLACER QUE DES PIÉCES RECOMMANDEES PAR LÉ FABRICANT.

1. REMOTE P.C. BOARD

REF. NO.	PARTS No.	DESCRIPTION
CF001	007-300455-63	RESONATOR CRK455 455KHz
IC001	033-806122-13	REMOTE TRANSMITTER UPD6122G-001
LED001	130-670303-00	INFRA RED EMITINT DIODE EL-1L1
PCB	090-385604-01	REMOTE BOARD T=1.6mm 94HB (46X119mm)
Q001	031-278050-03	TRANSISTOR NPN KTC8050C
D001-004	030-134148-00H	D SILICON IN4148
	210-010101-01S	REMOTE BATTERY COVER

2. SYS CON P.C. BOARD

REF. NO	PARTS No.	DESCRIPTION
D3001-3002/3004-3015/3079-3088 D3100-3109/3111-3112/3017/3110	030-320131-01H	D SILICON H 1SS131T T52
D3120(for AC-610/613R/615K)	030-320131-01H	D SILICON H 1SS131T T52
D 3018-3031	030-560034-10	D LED MYB34C YELLOW
D 3032-3038	030-540034-04	D LED MGB34D GREEN
D 3039-3042/3046/3048-3054	030-560031-00	D LED MYB31CA YELLOW
D 3043-3045	030-510031-00	D LED MSB31TA RED
D 3055-3059(for AC-610/613R/615K)	030-540034-04	D LED MGB34D GREEN
D 3114(for AC-415/615K)	030-320131-01H	D SILICON H 1SS131T T52
D 3115(S1/Y7)	030-320131-01H	D SILICON H 1SS131T T52
D 3116(for AC-413/613R)	030-320131-01H	D SILICON H 1SS131T T52
D 3117(for AC-415/615K)	030-320131-01H	D SILICON H 1SS131T T52
D 3119(E1/B1/RE1/E3)	030-320131-01H	D SILICON H 1SS131T T52
D 3121(for AC-410/413R/415K)	030-320131-01H	D SILICON H 1SS131T T52
D 3200/3205/3206/3211	030-560031-00	D LED MYB31CA YELLOW
D 3201-3204/3207-3210	030-540034-04	D LED MGB34D GREEN
IC3001	034-B00401-12	IC M38197MA-148FP TX2-SYS64-1
IC3002	033-509121-29	IC PST-9121 T05
IC3003	033-002402-42	IC XL24C02P
IC3004	033-202011-14	IC TA2011S
IC3005-3007/3200	034-304094-18	IC BU4094BCF
IC3008(for AC-610/613R/615K)	034-304094-18	IC BU4094BCF
IC3100	033-304094-18A	IC BU4094BC
IC3101(for AC-413/613R)	034-106579-33	IC SAA6579T-T
IC3102(for AC-413/613R)	034-307073-16	IC LC7073M
IN3001	035-131640-01	IND FL 16-BT-40GK
J 3001	061-121406-00	PHONE J HSJ1406-01-010 3.5
J 3002(for AC-415/615K)	061-121406-00	PHONE J HSJ1406-01-010 3.5
J 3003/3033	060-406123-99	SOCKET 00 6216 006 000 6P
J 3022	060-423124-99	SOCKET 00 6216 023 100 23P
P 3001	060-103204-07	PLUG S3B-PH-K WHT 3P
P 3011	060-422124-99	PLUG TKC-V22P-A1 22P
PH3001	036-600446-01	DETECTOR SPS-446-1
SW3001	040-002410-20	SW ROTARY EC16B24304
SW3002	046-080001-00	SW PUSH VPS-800
TR3003-3005/3107-3110/3124-3126	031-440144-05V	DTR DTC144ES(47-47) T05
TR3101/3103/3113-3120/3122-3123	031-211048-25V	TR 2SA1048 Y,GR T05
TR3100/3102/3104-3106	031-221425-00V	TR 2SB1425 S,E T05
TR3111(for AC-413/613R)	031-211048-25V	TR 2SA1048 Y,GR T05
TR3112(for AC-413/613R)	031-440144-05V	DTR DTC144ES(47-47) T05
TS3001-3022/3300/3301	046-110201-00	SW TACT 1.T-1102A 160GM
TS3027(for AC-610/613R/615K)	046-110201-00	SW TACT 1.T-1102A 160GM
VR3001	011-202298-00	VR ROTARY RK11K1140 L17.5 B202
VR3100/3102	112-222311-05	R S-FIX V T05EVNDCAA3 0.10W222
VR3101/3103	112-102311-05	R S-FIX V T05EVNDCAA3 0.10W102

W 3001	063-552701-03	WA PH-SAN L270 3P
W 3007(for AC-410/413R/415K)	077-622107-15	WF 2468#26 P2.0 C09 L100 15P
W 3007A(for AC-610/613R/615K)	077-622107-16	WF 2468#26 P2.0 C09 L100 16P
W 3008	077-622107-16	WF 2468#26 P2.0 C09 L100 16P
W 3009	077-626107-13	WF 2468#26 P2.0 C09 L100 13P
W 3010	077-626117-10	WF 2468#26 P2.0 C09 L100 10P
X 3001	007-208000-06	OSC CE CST8.00MTW 8.000MHZ
X 3002	037-032768-10M	OSC X'TAL C-002RX 32.768KHZ
X 3100(for AC-413/613R)	007-204000-06	OSC CE CST4.00MGW 4.000MHZ
X 3101(for AC-413/613R)	037-004332-10Z	OSC X'TAL HC-49/U-S 4.33200MHZ

3. MAIN P.C. BOARD

REF. NO.	PARTS No.	DESCRIPTION
D 001	⚠ 030-310040-02	D SILICON DBF40C 200/4.0A
D 003-004	030-410056-30H	D ZENER MTZJ5.6C T52
D 005-008	⚠ 030-310152-06	D SILICON RL152M11S15 100/1.5A
D 021/023/081-083/141	030-314002-10H	D SILICON 1N4002-F T52 100/1A
D 022/024/041-042/047/130-131 D 133/142/153-154/156-157	030-320131-01H	D SILICON H 1SS131T T52
D 025	030-410056-30H	D ZENER MTZJ5.6C T52
D 043/062/721-723	030-410062-10H	D ZENER MTZJ6.2A T52
D 044/151-152	030-410075-10H	D ZENER MTZJ7.5C T52
D 045	030-410051-20H	D ZENER MTZJ5.1B T52
D 046	030-410015-03H	D ZENER MTZJ15B T52
D 084	030-410330-00H	D ZENER MTZJ33B T52
D 085	030-410056-20H	D ZENER MTZJ5.6A T52
D 132/134	030-410220-00H	D ZENER MTZJ22D T52
D 155	030-410051-10H	D ZENER MTZJ5.1A T52
D 322(for AC-610/613R/615K)	030-320131-01H	D SILICON H 1SS131T T52
D 531-533(for AC-615K)	030-320131-01H	D SILICON H 1SS131T T52
D 551-554(for AC-415/615K)	030-320131-01H	D SILICON H 1SS131T T52
D 724	030-320131-01H	D SILICON H 1SS131T T52
D 751-753(for AC-410/413R/415K)	030-410062-10H	D ZENER MTZJ6.2A T52
F1(for AC-410/413R/415K)	⚠ 082-220630-06	FUSE TIME 218 250V 630MA
F2(for AC-415K)	⚠ 082-220630-06	FUSE TIME 218 250V 630MA
F3(for AC-410/413R/415K)	⚠ 082-222500-06	FUSE TIME 218 250V 2.50A
F4(for AC-410/413R/415K)	⚠ 082-222500-06	FUSE TIME 218 250V 2.50A
F1(for AC-610/613R/615K)	⚠ 082-222000-06	FUSE TIME 218 250V 2.00A
F2(for AC-615K)	⚠ 082-222000-06	FUSE TIME 218 250V 2.00A
F3(for AC-610/613R/615K)	⚠ 082-225000-06	FUSE TIME 218 250V 5.00A
F4(for AC-610/613R/615K)	⚠ 082-225000-06	FUSE TIME 218 250V 5.00A
IC 021	033-507805-00B	IC ML7805FA 5V/1A
IC 101	033-304094-18A	IC BU4094BC
IC 201/202	033-218751-38	IC SI18751
IC 203/204(AC-610/613R/615K)	033-218751-38	IC SI18751
IC 501(AC-415K/610/613R/615K)	033-K65843-12	IC M65843AFP
IC 581	033-904558-30A	IC NJM4558L
IC 602(for AC-610/613R/615K)	034-K02177-74	IC NJM2177AFB3
IC 701	034-262422-12	IC M62422FP
IC 751/761 (for AC-610/613R/615K)	033-209412-14	IC TC9412P
IC 761A(for AC-410/413R/415K)	033-009260-14	IC TC9260P
IC 801	033-304094-18A	IC BU4094BC
IC 802(for AC-610/613R/615K)	033-304094-18A	IC BU4094BC
J 011	060-422122-99	SOCKET TKC-V22X-A1 22P
J 201(for AC-610/613R/615K)	061-123000-00	PHONE J HSJ3000-01-010 3.5
J 201A(for AC-410)	061-122000-00	PHONE J HSJ2000-01-010 3.5

J 301(only for AC-610/613R/615K)	061-780243-00	PIN J HSP-243V-06 3P
L 202(for AC-410/413R/610/613R)	084-070410-00	COIL BALUM OPW/5-8-14-5H2
L 203(for AC-610/613R)	084-070410-00	COIL BALUM OPW 15-8-14-5H2
L 801	002-300002-09	COIL LF LF-4D-102 102UH
P 006	060-116204-07	PLUG S16B-PH-K WHT 16P
P 013	060-107045-20	PLUG PS2438-7 7P
P 801	060-102045-20	PLUG B2P-3-VH P7.92 2P
R 004-005/043	⚠ 013-478205-75	R OMF H S10FLR ERG12SP1/2WR47J
R 021/080/103/106/109/112	⚠ 013-109205-75	R OMF H S10FLR ERG12SP1/2W1R0J
R 047-048	⚠ 013-221205-75	R OMF H S10FLR ERG12SP1/2W221J
R 060-063	⚠ 013-392205-75	R OMF H S10FLR ERG12SP1/2W392J
R 132/135-136/141	⚠ 013-151205-75	R OMF H S10FLR ERG12SP1/2W151J
R 137	⚠ 013-478205-75	R OMF H S10FLR ERG12SP1/2W562J
R 213/263	⚠ 013-479305-75	R OMF H S12 FLR ERG1SP 1W 4R7J
R 233/283(for AC-610/613R/615K)	⚠ 013-479305-75	R OMF H S12 FLR ERG1SP 1W 4R7J
TM 201	061-780401-00	TERMINAL PUSH CJ-9007-060 4P
TR 022/024/026/043/131	031-440114-05V	DTR DTC114ES(10-10) T05
TR 023/025	031-220621-00V	TR 2SB621 R,S T05
TR 021/041/082/101-104/130/132	031-211048-25V	TR 2SA1048 Y,GR T05
TR 044/081	031-221375-00	TR 2SB1375
TR 061	031-440114-60V	DTR DTC114TS(10) T05
TR 134(for AC-610/613R/615K)	031-241785-00	TR 2SD1785
TR 134A(for AC-410/413R/415K)	031-241796-00	TR 2SD1796
TR 045/135/151/152/154/155/201/251	031-232458-25V	TR 2SC2458 Y,GR T05
TR 137	031-221258-00	TR 2SB1258
TR 137A	031-221257-00	TR 2SB1257
TR 153	031-430114-19V	DTR DTA114TS(10) T05
TR 158	031-440114-60V	DTR DTC114TS(10) T05
TR 221/271(for AC-610/613R/615K)	031-232458-25V	TR 2SC2458 Y,GR T05
TR 320	031-430114-05V	DTR DTA114ES(10-10) T05
TR 321(for AC-610/613R/615K)	031-430114-05V	DTR DTA114ES(10-10) T05
TR 322(for AC-610/613R/615K)	031-440114-60V	DTR DTC114TS(10) T05
TR 531(for AC-615K)	031-430114-19V	DTR DTA114TS(10) T05
TR 532/533/535/536/539-541 (for AC-615K)	031-440144-60	DTR DTC144TS(47) T05
TR 534/537/538(for AC-615K)	031-440114-60V	DTR DTC114TS(10) T05
TR 551/552(for AC-415K/615K)	031-440114-60V	DTR DTC114TS(10) T05
TR 601-604(AC-610/613R/615K)	031-430114-19V	DTR DTA114TS(10) T05
W 801(for AC-610/613R/615K)	063-502401-11	WA SDN L200 6P
W 913	063-553201-07	WA SDN-VH #22 L320 7P
X 501(only for AC-610)	007-002000-40	OSC CE CSA2.00MG 2.000MHZ
X 551(for AC-415K/615K)	007-200400-03	OSC CE DCRK400 400.000KHZ

4. TC-DK P.C. BOARD

REF. NO.	PARTS No.	DESCRIPTION
D 1300-1304	030-314002-10H	D SILICON 1N4002-F T52 100/1A
D 1400/1401/1721	030-320131-01H	D SILICON H 1SS131T T52
D 1501	030-410051-10H	D ZENER MTZJ5.1A T52
FL1611/1621/1661/1671	007-100100-09	COIL TUN 1 100Z-121 100.00KHZ
IC1001	033-314052-21	IC MC14052BCP
IC1002/1210	033-904558-30A	IC NJM4558L
IC1100	033-601782-64Q	IC CXA1782BQ
IC1200	033-K02508-64	IC CXD2508AQ
IC1300	033-209258-61	IC KA9258D
IC1400	033-206247-18	IC BA6247
IC1601	034-101897-64	IC CXA1897Q
IC1701/1702	034-304094-18	IC BU4094BCF
J 1001	061-782421-00	PIN J HSP-242V1-05 2P

J 1002	060-423123-99	SOCKET 00 6216 023 000 23P
J 1100	060-416109-99	SOCKET 00 6232 016 006 16P
L 1501(S1/U5/U8/Y6/Y7/A3)	005-229056-01H	COIL FIX 1 LAP02TA T26 2R2J
L 1721	005-101056-00H	COIL FIX 1 LAP02TA T26 101J
P 1004	060-108205-27	PLUG B8B-PH-K WHT 8P
P 1005	060-103205-27	PLUG B3B-PH-K WHT 3P
P 1400	060-105204-27	PLUG S5B-PH-K WHT 5P
P 1401	060-107204-29	PLUG S7B-PH-K WHT 7P
P 1402	060-106206-27	PLUG S6B-PH-K WHT 6P
T 1731	002-800002-09	COIL OSC 1 C1047
TM1501	061-480312-00	TERMINAL LEVER HSP-312V-02
TR1100/1400/1632/1682/1743	031-211048-25V	TR 2SA1048 Y,GR T05
TR1300/1301	031-221425-00V	TR 2SB1425 S,E T05
TR1302/1601/1621/1651/1671/ TR1644/1721/1722	031-440114-05V	DTR DTC114ES(10-10) T05
TR1401/1501/1611-1622/1661-1662/1701	031-232458-25V	TR 2SC2458 Y,GR T05
TR1502(for AC-413R/613R)	031-250304-06V	TR FET 2SK304 E,F T05
TR1613/1663	031-241012-06V	TR 2SD1012-V-SPA-AC F,G,H T05
TR1631/1681/1665	031-430114-19V	DTR DTA114TS(10) T05
TR1641/1642/1691/1692 (for AC-610/613R/615K)	031-430114-19V	DTR DTA114TS(10) T05
TR1643/1693(for AC-615K)	031-430114-19V	DTR DTA114TS(10) T05
TR1645/1695(for AC-415K/615K)	031-232458-25V	TR 2SC2458 Y,GR T05
TR1723-1725	031-231815-26V	TR 2SC1815 Y,GR T05
TR1726(E1/B1/RE1/E3)	031-211048-25V	TR 2SA1048 Y,GR T05
TR1731-1732(E1/B1/RE1/E3)	031-232458-25V	TR 2SC2458 Y,GR T05
TR1771-1774(for AC-610/613R/615K)	031-440114-05V	DTR DTC114ES(10-10) T05
TU1501(E1/B1/RE1/E3)	103-146601-04	TUNER TFCB3E720A FM/MW/LW
TU1501A(S1/U5/U8/Y6)	103-146401-04	TUNER TFCB1U717A FM/AM
TU1501B(Y7)	103-146101-04	TUNER TFCB1S713A FM/MW/SW
VR1200	112-103311-05	R S-FIX V T05EVNDCAA3 0.10W103
W 1006	063-551001-16	WA PH L100 16P
W 1400/1401	077-322087-09	WF 2468#26 P2.0 C09 L80 9P
X 1200	007-201693-06	OSC CE CSA16.93MHZ
D 4410	030-600048-00	D LED GL4800
J 4410	060-405124-99	SOCKET 00 6216 005 100 5P
J 4411	060-405123-99	SOCKET 00 6216 005 000 5P
TR4410	031-594800-00	TR PHOTO PT4800
W 4410	077-622077-02	WF 2468#26 P2.0 C09 L70 2P
W 4412	063-555301-05	WA SAN-PH L530 5P

5. P.C. BOARD BLOCK

REF. NO.	PARTS No.	DESCRIPTION
1-a(AC-410 B1/E1/E3)	771-385001-01	CD/TUNER/TAPE P.C. BOARD
1-b(AC-410 S1)	771-385001-02	CD/TUNER/TAPE P.C. BOARD
1-c(AC-413R E1)	771-385001-03	CD/TUNER/TAPE P.C. BOARD
1-d(AC-415K U5/U8/Y6)	771-385001-04	CD/TUNER/TAPE P.C. BOARD
1-e(AC-415K Y7)	771-385001-05	CD/TUNER/TAPE P.C. BOARD
2-a(AC-410 B1/E1/E3)	771-385001-06	KEY/DISPLAY P.C. BOARD
2-b((AC-410 S1)	771-385001-07	KEY/DISPLAY P.C. BOARD
2-c(AC-413R E1)	771-385001-08	KEY/DISPLAY P.C. BOARD
2-d(AC-415K U5/U8/Y6)	771-385001-09	KEY/DISPLAY P.C. BOARD
2-e(AC-415K Y7)	771-385001-10	KEY/DISPLAY P.C. BOARD
3-a(AC-410 B1/E1/E3/S1)	771-385001-11	POWER AMP/MAIN P.C. BOARD
3-b(AC-413R E1)	771-385001-12	POWER AMP/MAIN P.C. BOARD
3-c(AC-415K U5/U8/Y6/Y7)	771-385001-13	POWER AMP/MAIN P.C. BOARD
4(for TX-410/510/610/710 of all version)	771-385601-13	REMOTE P.C. BOARD
5-a(AC-610 B1/E1/E3)	771-385501-01	CD/TUNER/TAPE P.C. BOARD
5-b(AC-610 S1)	771-385501-02	CD/TUNER/TAPE P.C. BOARD

5-c(AC-613R E1)	771-385501-03	CD/TUNER/TAPE P.C. BOARD
5-d(AC-615K U5/U8/Y6)	771-385501-04	CD/TUNER/TAPE P.C. BOARD
5-e(AC-415K Y7)	771-385501-05	CD/TUNER/TAPE P.C. BOARD
6-a(AC-610 B1/E1/E3)	771-385501-06	KEY/DISPLAY P.C. BOARD
6-b((AC-610 S1)	771-385501-07	KEY/DISPLAY P.C. BOARD
6-c(AC-613R E1)	771-385501-08	KEY/DISPLAY P.C. BOARD
6-d(AC-615K U5/U8/Y6)	771-385501-09	KEY/DISPLAY P.C. BOARD
6-e(AC-615K Y7)	771-385501-10	KEY/DISPLAY P.C. BOARD
7-a(AC-610 B1/E1/E3/S1)	771-385501-11	POWER AMP/MAIN P.C. BOARD
7-b(AC-613R E1)	771-385501-12	POWER AMP/MAIN P.C. BOARD
7-c(AC-615K U5/U8/Y6/Y7)	771-385501-13	POWER AMP/MAIN P.C. BOARD

6.YMC03 P.C. BOARD

REF.NO.	PARTS NO.	DESCRIPTION
D4410	030-600048-00	D LED GL4800
TR4410	031-594800-00	TR PHOTO PT4800
J4410	060-405124-99	SOCKET 006216023100 5P
J4411	060-405123-99	SOCKET 006216023808 5P

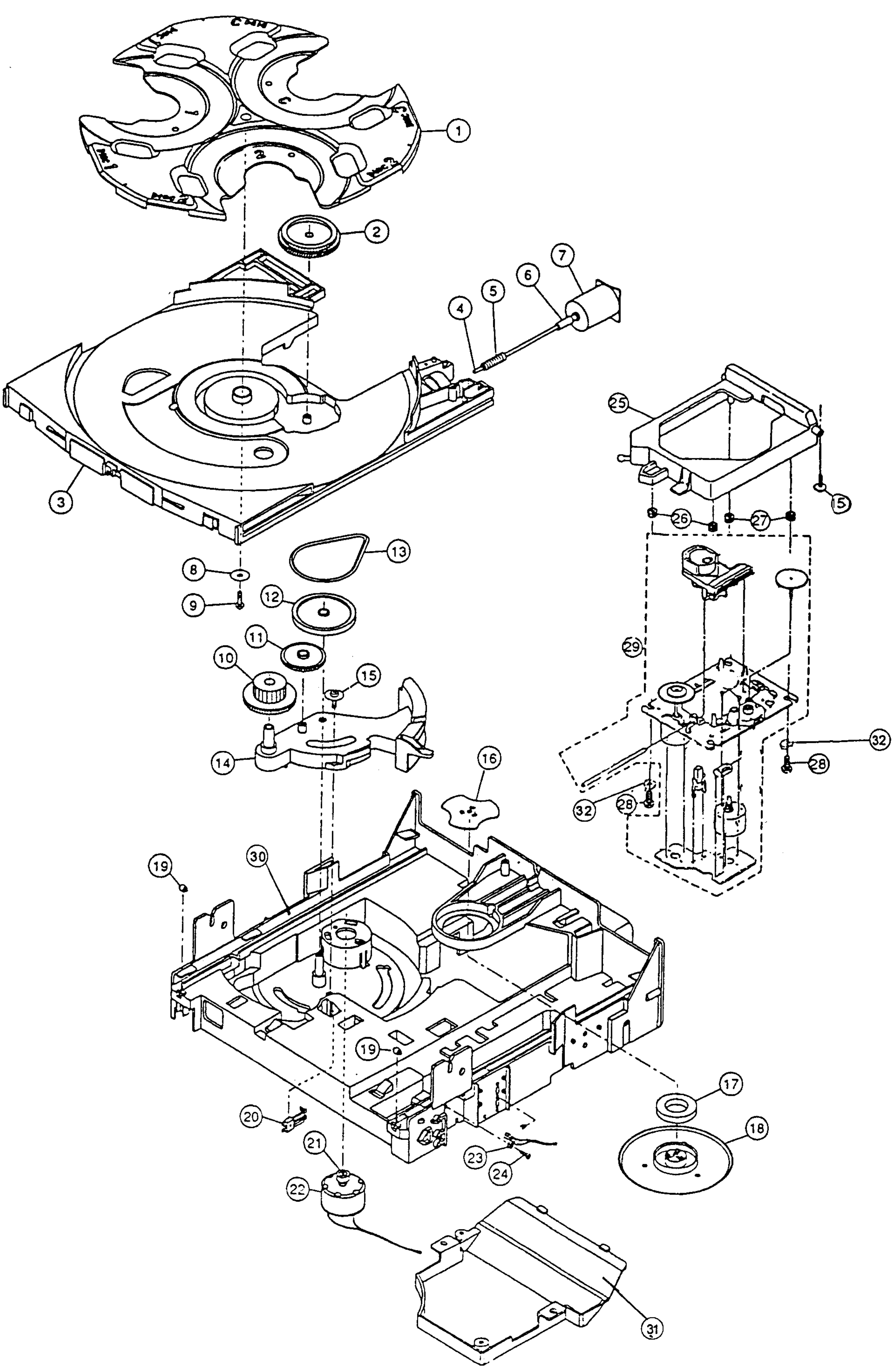
7. ACCESSARY

REF. NO.	PARTS. No.	DESCRIPTION
1	790-010101-01	REMOCON RC-S610
2	790-010102-01	REMOCON RC-S510

8. CD MECHANISM

REF. NO.	PARTS NO.	DESCRIPTION
1	229-385602-01S	HOLDERDISC
2	288-385601-01Z	GEAR WORMWHEEL TABLE
3	220-385602-01S	TRAY LOADING
4	438-385601-01	SHAFT
5	288-385604-01Z	WORM
6	239-385601-01Z	JOINT
7	743-037012-54	MOTOR PF-370CA-15370 12V
8	634-150030-08	PW30X150X080 THK
9	619-300208-00	TAPING SCREW 3X1.25X8mm
10	288-385605-01Z	GEAR LOADING (A)
11	288-385606-01Z	GEAR LOADING(B)
12	288-385602-01Z	PULLEY GEAR
13	334-385604-01	BELT LOADING
14	288-385603-01S	HOLDER GEAR
15	615-300308-00	BW/T 3X8mm
16	428-385603-01	PLATE CLAMPER
17	489-383801-01	MAGNET DISC CLAMP
18	229-385606-01S	CLAMPER
19	259-385602-01Z	ROLLER
20	047-102127-00	LEAF SWITCH LSA-2127E
21	243-385601-01Z	PULLEY
22	743-050009-54	MOTOR RF-500TB-14415 D/V
23	047-101119-01	LEAF SWITCH ISA-1119H
24	610-260208-10	R/T 2.6X8mm
25	220-385601-01S	HOLDER TRAVERSE
26	334-385606-01	INSULATOR
27	334-385606-01	INSULATOR
28	610-200216-00	SELF-SCREW TAPING B/T 2.0X16
29	747-021301-02	MECHA TRAVERSE KSM213CCM
30	220-385603-01R	CHASSIS MAIN
31	219-385601-01Z	CD MECH COVER
32	634-100027-05	METAL WASHER 10X2.7X0.5

CD MECHANISM BLOCK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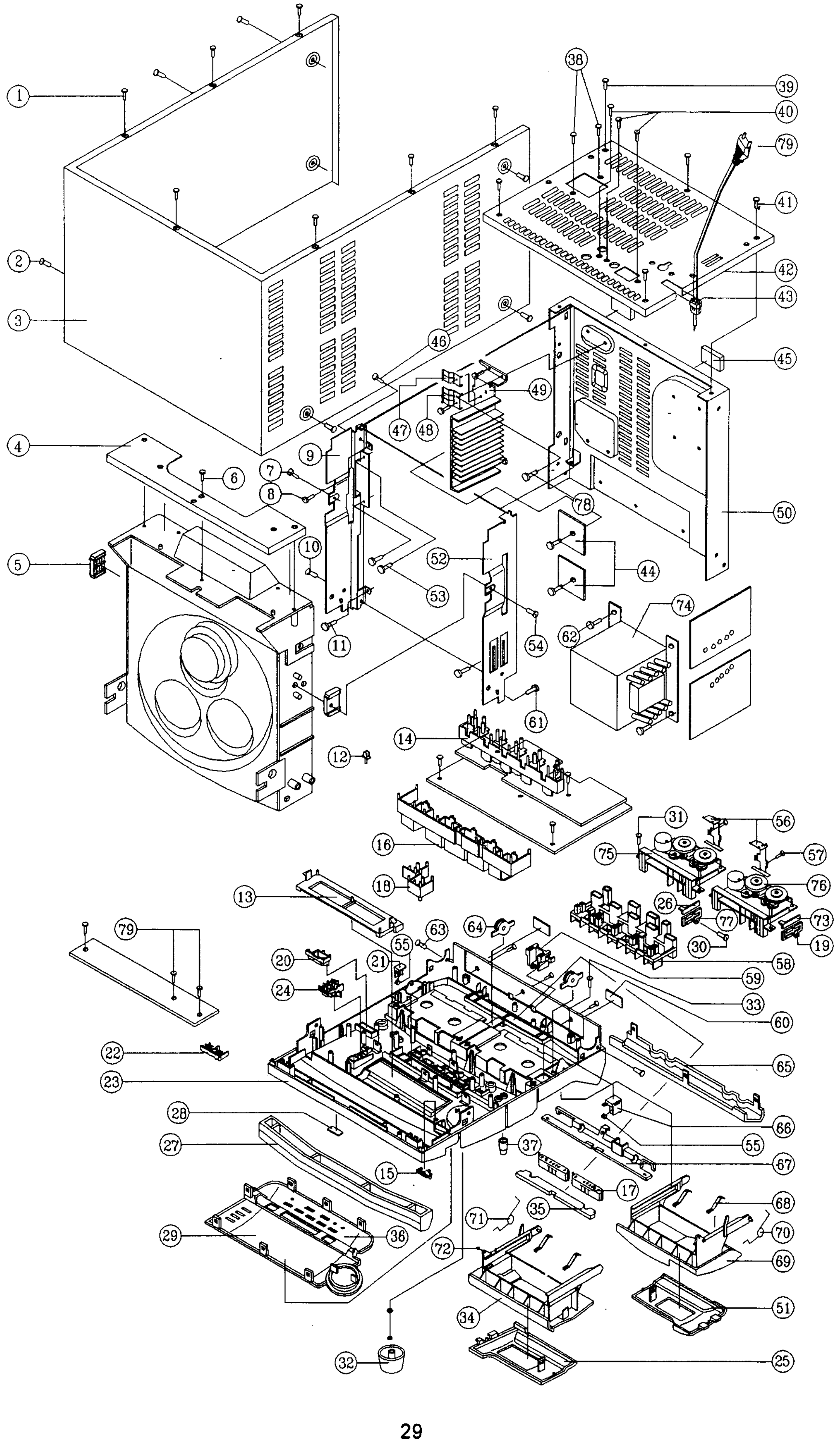
9. AC-410/413R/415K

REF. NO.	PARTS NO.	DESCRIPTION
1	606A301208-00	TAPING SCREW P TYPE BID H 3X1.25PX8MM
2	606A301208-00	TAPING SCREW P TYPE BID H 3X1.25PX8MM
3	402-385002-01	MAIN COVER BLACK
4	495-385017-01	REAR CABINET SUB
5	284-385001-01R	MECH SPACER BLACK HI-PS
6	619-300208-00	TAPING SCREW P TYPE BID H 3X8MM BLACK
7	619-300208-00	TAPING SCREW P TYPE BID H 3X8MM BLACK
8	619-300208-00	TAPING SCREW P TYPE BID H 3X8MM BLACK
9	428385001-01	CD BRACKET 'L'
10	619-300208-00	TAPING SCREW P TYPE BID H 3X8MM BLACK
11	619-300208-00	TAPING SCREW P TYPE BID H 3X8MM BLACK
12	292-385002-01S	DOLABY BUTTON (A)
13	229-385011-01R	FLD BRACKET HI-PS
14	291-385014-01S	FUNCTION BUTTON ABS
15	606A301208-00	TAPING SCREW P TYPE BID H 3X1.25PX8MM
16	291-385005-01Z	CD FUNCTION BUTTON (B) ABS+PC
17	250-385001-01S	LAMP HOLDER WHITE ABS
18	292-385001-01S	REC BUTTON BLACK ABS
19	259-385004-01Z	INTERLOCK 'R' POM
20	291-385001-01S	POWER BUTTON BLACK ABS
21-a	229-385006-01Z	LATCH BRACKET BLACK POM
21-b	229-385001-01Z	LATCH BRACKET (L) POM
22	291-385002-01S	CD FUNCTION BUTTON (A)
23-a(AC-410)	200-385011-01R	FRONT CABINET HI-PS
23-b(AC-413R)	200-385011-03R	FRONT CABINET HI-PS
23-c(AC-415K)	200-385013-01R	FRONT CABINET HI-PS
24	275-385001-01S	TIMER BUTTON BLACK ABS
25	261-385001-01K	CASS DOOR LENS (L) SMOKE
26	259-385001-01S	INTERLOCK HOLDER 'L' ABS
27	219-385002-01R	CD DOOR HI-PS
28	286-385001-01S	NAME PLATE 'AKAI'
29	263-385001-01K	DISPLAY LENS AS
30	601-264506-60A	TAPPING SCREW FLAT HEAD 2.6X6MM
31	619-300312-00	TAPPING SCREW P TYPE FLAT HEAD 3X6MM
32	273-385001-01S	VOLUME KNOB ABS
33	619-300306-00	TAPING SCREW P TYPE FLAT HEAD 3X6MM
34	211-385011-01S	CASS DOOR (L) HI-PS
35	263-385003-01L	DIR LENS CLEAR ACRYLIC
36	234-385011-01K	CONTORL SUB PANEL AS
37	273-385002-01S	MIC KNOB BLACK ABS
38	606A301208-00	TAPING SCREW P TYPE BID H 3X1.25PX8MM
39	606A301208-00	TAPING SCREW P TYPE BID H 3X1.25PX8MM
40	614-300208-00	SELF-TAPPING SCREW B/T 3X8MM BLACK
41	606A301208-00	TAPING SCREW P TYPE BID H 3X1.25PX8MM
42-a(AC-410 E1,B1,E3)	495-385001-01	PANEL REAR
42-b(AC-410 S1)	495-385001-03	PANEL REAR
42-c(AC-413R RE1)	495-385001-05	PANEL REAR
42-d(AC-415K U5,Y6)	495-385002-01	PANEL REAR
42-e(AC-415K U8,Y7)	495-385002-03	PANEL REAR
43	650-381301-01	CORD BUSHING
44	619-300408-00	TAPING SCREW B/T WASHER 3X8MM BLACK
45	207-385101-01Z	REAR FOOT (PLASTIC) BLACK EVA
46	619-300208-00	TAPING SCREW P TYPE BID H 3X8MM BLACK
47	428-385003-01	HOLDER BRACKET SECC-E20 T=1
48	428-385001-01	HOLDER BRACKET (H)
49	481-385101-01	HEAT SINK (H)

50	493-385011-01	METAL BOTTOM CABINET
51	261-385002-01K	CASS DOOR LENS (R) SMOKE
52	428-385002-01	CD BRACKET 'R'
53	619-300208-00	TAPING SCREW P TYPE BID H 3X8MM BLACK
54	619-300208-00	TAPING SCREW P TYPE BID H 3X8MM BLACK
55	477-385011-01	LATCH PUSH SPRING
56	483-385001-01	DECK SHIELD COVER
57	604-264501-00A	TAPPING SCREW C TYPE BID 2.6X5MM
58	229-385014-01S	LED BRACKET WHITE ABS
59	229-385007-01S	HOLDER LID BRACKET BLACK ABS
60	330-385001-01	FRONT CUSHION FOOT
61	619-300208-00	TAPING SCREW P TYPE BID H 3X8MM BLACK
62	602-407008-60A	TAPPING SCREW P TYPE WASHER H 4X8MM
63	619-300212-00	TAPPING SCREW P TYPE BID H 3X12MM
64	703-385002-01	DAMPER DA-60W/W (105) ASSEMBLY
65	263-385002-01K	DECK DIR LENS AS
66-a	229-385006-01Z	LATCH BRACKET BLACKPOM
66-b	229-385002-01Z	LATCH BRACKET (R) POM
67	229-385003-01S	DECK DIR BLACK ABS
68	470-385001-01	CASS DOOR SPRING SHEET
69	211-385012-01S	CASS DOOR (R) HI-PS
70	471-385012-01	CASS DOOR SPRING WIRE (R)
71	471-385011-01	CASS DOOR SPRING WIRE (L)
72	259-385005-01S	STUD (BOSS LID) BLACK ABS
73	259-385002-01S	INTERLOCK HOLDER 'R' ABS
74-a(AC-410/413R)	001-733850-42A	POWER TRANSFORMER C1047-E
74-b(AC-415K)	001-733850-02	POWER TRANSFORNER C1047-U
75	741-490065-09	LOGICAL CONTROL DECK MECHA CMAL2Z065A
76	471-490066-09	LOGICAL CONTROL DECK MECHA CMAL2Z066A
77	259-385003-01Z	INTRLOCK 'L' POM
78	619-300306-00	TAPINET SCREW P TYPE FLAT HEAD 3X6MM
79-a(except,B1,Y6,S1)	071-669078-00A	AC LINE CORD VDE
79-b(B1,Y6)	071-449078-20	AC LINE CORD BS
79-c(S1)	071-559078-10	AC LINE CORD SAA

FINAL ASSEMBLY BLOCK

MODEL: AC-410/413R/415K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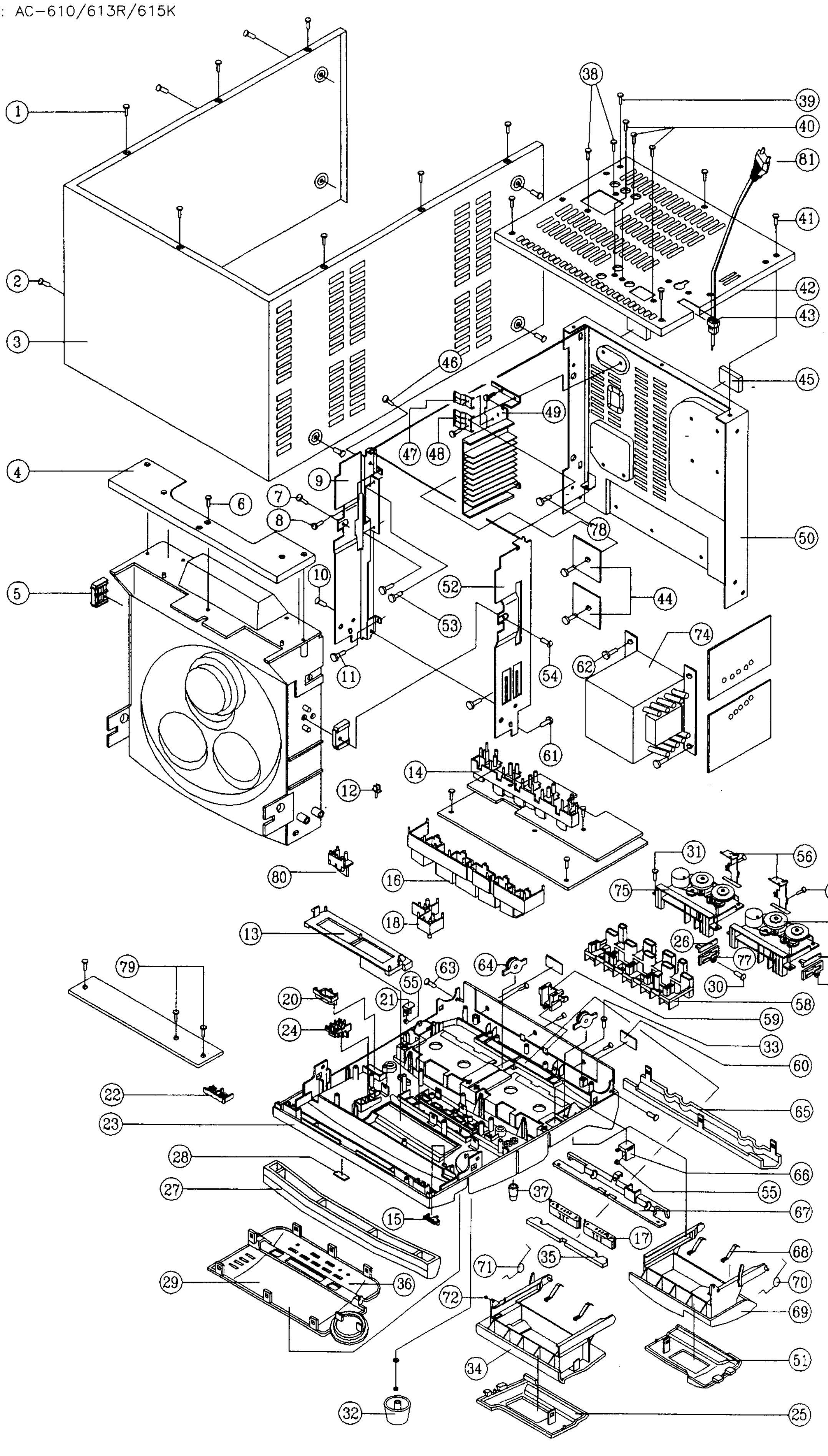
10. AC-610/613R/615K

REF. NO.	PARTS NO.	DESCRIPTION
1	606A301208-00	TAPPING SCREW P TYPE BID H 3X1.25PX8MM
2	606A301208-00	TAPPING SCREW P TYPE BID H 3X1.25PX8MM
3	402-385002-01	MAIN COVER (METAL)
4	495-385017-01	REAR CABINET SUB
5	248-385001-01R	MECH SPACER BLACK HI-PS
6	619-300208-00	TAPPING SCREW P TYPE BID H 3X8MM BLACK
7	619-300208-00	TAPPING SCREW P TYPE BID H 3X8MM BLACK
8	619-300208-00	TAPPING SCREW P TYPE BID H 3X8MM BLACK
9	428-385001-01	CD BRACKET 'L'
10	619-300208-00	TAPPING SCREW P TYPE BID H 3X8MM BLACK
11	619-300208-00	TAPPING SCREW P TYPE BID H 3X8MM BLACK
12	292-385501-01S	DOLABY BUTTON (B)
13	229-385011-01R	FLD BRACKET HI-PS
14	291-385014-01S	FUNCTION BUTTON ABS
15	291-385003-01S	BALANCE BUTTON BLACK ABS
16	291-385005-01Z	CD FUNCTION BUTTON (B) ABS=PC
17	250-385001-01S	LAMP HOLDER WHITE ANS
18	292-385001-01S	REC BUTTON BLACK ABS
19	259-385001-01Z	INTERLOCK 'R' POM
20	291-385001-01S	POWER BUTTON BLACK ABS
21-a	229-385006-01Z	LATCH BRACKET BLACK POM
21-b	229-385001-01Z	LATCH BRACKET(L) POM
22	291-385002-01S	CD FUNCTION BUTTON (A)
23-a(AC-610)	200-385012-01R	FRONT CABINET HI-PS
23-b(AC-613R)	200-385001-02R	FRONT CABINET HI-PS
23-c(AC-615K)	200-385014-01R	FRONT CABINET HI-PS
24	275-385001-01S	TIMER BUTTON BLACK ABS
25	261-385001-01K	CASS DOOR LENS (L) SMOKE
26	259-385001-01S	INTERLOCK HOLDER 'L' ABS
27	219-385002-01S	CD DOOR HI-PS
28	286-385001-01S	NAME PLATE 'AKAI'
29	263-385001-02K	DISPLAY LENS AS
30	601-164506-60A	TAPPING SCREW FLAT HEAD 2.6X6MM
31	619-300312-00	TAPPING SCREW P TYPE FLAT HEAD 3X6MM
32	273-385001-01S	VOLUME KNOB ABS
33	619-300306-00	TAPING SCREW P TYPE FLAT HEAD 3X6MM
34	211-385011-01S	CASS DOOR (L) HI-PS
35	263-385003-01L	DIR LENS CLEAR ACRYLIC
36	234-385011-01K	CONTORL SUB PANEL AS
37	273-385002-01S	MIC KNOB BLACK ABS
38	606A301208-00	TAPINET SCREW TYPE BID H 3X1.25PX8MM
39	606A301208-00	TAPINET SCREW P TYPE BID H 3X1.25PX8MM
40	614-300208-00	SELF-TAPPING SCREW B/T 3X8MM BLACK
41	606A301208-00	TAPINET SCREW P TYPE BID H 3X1.25PX3MM
42-a(AC-610 E1,B1,E3)	495-385005-01	PANEL REAR
42-b(AC-610 S1)	495-385005-02	PANEL REAR
42-c(AC-613R RE1)	495-385005-03	PANEL REAR
42-d(AC-610 U5,Y6)	495-385006-01	PANEL REAR
42-e(AC-610 U8,Y7)	495-385006-02	PANEL REAR
43	650-381301-01	CORD BUSHING
44	481-385002-01	HEAT SINK
45	330-385002-01	REAR CUSHION FOOT
46	619-300208-00	TAPPING SCREW P TYPE BID H 3X8MM BLACK
47	428-385003-01	HOLDER BRACKET SECC-E20 T=1
48	428-385101-01	HOLDER BRACKET (H)
49	481-385101-01	HEAT SINK (H)

50	493-385011-01	METAL BOTTOM CAB
51	261-385002-01K	CASS DOOR LENS (R) SMOKE
52	428-385002-01	CD BRACKET 'R'
53	619-300208-00	TAPPING SCREW P TYPE BID H 3X8MM BLACK
54	619-300208-00	TAPPING SCREW P TYPE BID H 3X8MM BLACK
55	477-385011-01	LATCH PUSH SPRING
56	483-385001-01	DECK SHIELD COVER
57	604-264501-00A	TAPPING SCREW C TYPE BID H 2.6X5MM
58	229-385014-01S	LED BRACKET WHITE ABS
59	229-385007-01S	HOLDER LID BRACKET BLACK ABS
60	330-385001-01	FRONT CUSHION FOOT
61	619-300208-00	TAPPING SCREW P TYPE BID H 3X8MM BLACK
62	602-407008-60A	TAPPING SCREW P TYPE WASHER H 4X8MM
63	619-300212-00	TAPING SCREW P TYPE BID H 3X12MM BLACK
64	703-385002-01	DAMPER DA-60W/W (105) ASSEMBLY
65	263-385002-01K	DECK DIR LENS AS
66-a	229-385006-01Z	LATCH BRACKET BLACK POM
66-b	229-385002-01Z	LATCH BRACKT(R) POM
67	229-385003-01S	DECK DIR BKT BLACK ABS
68	470-385001-01	CASS DOOR SPRING SHEET
69	211-385012-01S	CASS DOOR (R) HI-PS
70	471-385012-01	CASS DOOR SPRING WIRE (R)
71	471-385011-01	CASS DOOR SPRING WIRE (L)
72	259-385005-01S	STUD (BOSS LID) BLACK ABS
73	259-385002-01S	INTERLOCK HOLDER 'R' ABS
74-a(AC-610/613R)	001-873855-42	POWER TRANSF ORMER C1050-E
74-b(AC-615K)	001-873855-02	POWER TRANSFORMER C1050-U
75	471-490065-09	LOGICAL CONTROL DECK MECHA CMAL2Z065A
76	471-490066-09	LOGICAL CONTROL DECK MECHA CMAL2Z066A
77	259-385003-01Z	INTERLOCK 'L' POM
78	606A301208-00	TAPING SCREW P TYPE BID H 3X1.25PX8MM
79	619-300306-00	TAPPING SCREW P TYPE FLAT HEAD 3X6MM
80	292-385502-01S	TEST BUTTON
81-a(except,B1,Y6,S1)	071-669078-00A	AC LINE CORD VDE
81-b(B1,Y6)	071-449078-20	AC LINE CORD BS
81-c(S1)	001-873855-02	AC LINE CORD SAA

FINAL ASSEMBLY BLOCK

MODEL: AC-610/613R/615K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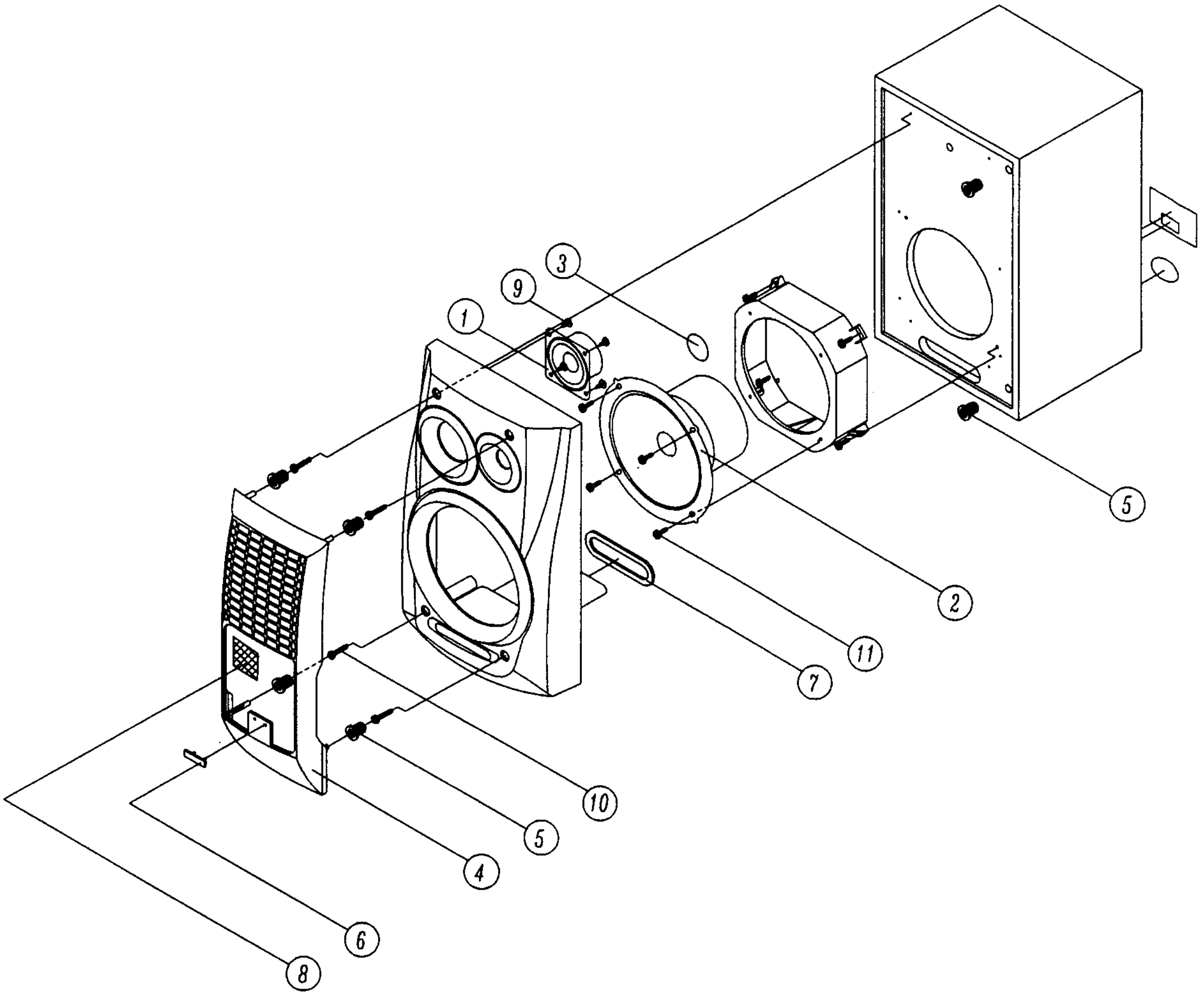
11. SPEAKER SYSTEM (SR-410)



REF. NO	PART NO	DESCRIPTION
1	066-283220-WT	2" 8Ω 30-40W
2	066-953254-WT	$5^{1}/4$ 6Ω 30-40W
3	070-100027-02Z	27MM PIEZO
4	239-050201-01R	ADAPTOR
5	259-050201-01Z	CUSHION FOR SPEAKER BOX BLK S.B.R
6	286-385002-01S	NAME PLAATE FOR AKAI
7	323-050104-01	SPONG SPACER
8	583-050201-01	SPEAKER CLOTH 317MM X200MM BLK
9	610-350208-10	SELF-TAPPING SCREW R/T 3.5X8 BLACK
10	610-400220-30	SELF-TAPPING SCREW R/T 4.0X20 BLACK
11	614-400216-30	SELF-TAPPING SCREW R/T 4.0X16 BLACK

XII. ABBREVIATIONS

TUNER

ABBREVIATION	EXPLANATION	ABBREVIATION	EXPLANATION
AFC	Auto Frequency Control	MEMO	MEMOry
AGC	Auto Gain Control	MI-COM	MIcro-COMputer
ALC	Auto Level Control	MIN	MINimum
AM	Amplitude Modulation	MIX	MIXing
AMP	AMPlifier	MPX	MultiPleX
ANT	ANTenna	MW	Medium Wave(frequency)
BATT	BATTery	NC	No Connection
BLK	BLocK	NFB	Negative Feed Back
BUFF	BuFFer	OSC	OSCillator
COMP	COMParator	PCB	Printed Circuit Board
DET	DETect(DETector)	PLL	Phase Locked Loop
FLD	FLuorescent Display	Q.D	Quadrature Detector
FM	Frequency Modulation	Rch	Right channel
FREQ	FREQuency	REF	REFerence
GND	GrouND	REG	REGulator
H	High	RF	Radio Frequency
HPF	High Pass Filter	SEG	SEGment
IF	Intermediate Frequency	SELE	SELEctor
IHF	Institut of High Fidelity	SENS	SENSitivity
IND	INDicator	SIG	SIGnal
I/O	In/Out	S/N	Signal to Noise Ratio
JW	Jumper Wire	SSG	Standard Signal Generator
L	Low	STD	STanDard
LCD	Liquid Crystal Display	SW	Switch: Short Wave(frequency)
LCH	Left CHannel	THD	Total Harmonic Distortion
LED	Light Emitting Diode	TP	Test Point
LPF	Low Pass Filter	VCO	Voltage Controlled Oscillator
LW	Long Wave (Frequency)	VR	Variable Resistor
XTAL	Crystal		

COMPACT DISC

ABBREVIATION	EXPLANATION	ABBREVIATION	EXPLANATION
A-D	Analog to Digital(Converter)	Mb	Mega Bits
ADC	Analog Code Decimal (Converter)	MDA	Mortor Drive Amplifier
BCD	Binaary Code Decimal	MFM	Modified Frequency Modulation
BPI	Bits Per Inch	MW	Mono-stable Multivibrator
CD	Compact Disc	M2FM	Modified Midified Frequency Modulation
CIRC	Cross Interleaving & Reed	MOD2	Modulo 2 (Addition)
	Solomon Coding	MP	Microprocessor
CLV	Constant Linear Velocity	MSB	Most Significant Bit
CP	Clock Pulses	NA	Numerical Aperture
CRCC	Cyclic Redundancy Check Codes	NRZ	Non Return to Zero
D Level	Decision Level	NRZ-I	Non Return to Zero Inverted
D-A	Digital to Analog(Converter)	P	Parity Data
DAC	Digital to Analog(Converter)	PAM	Pulse Amplitude Modulation
DAD	Digital Audio Disc	PCM	Pulse Code Modulation
DEM	Dynamic Element Matching	PD	Phase Detector
DPD	Differential Phase Detection	PE	Phase Encode
DSV	Digital sum Value	PLL	Phase locked Loop
EFM	Eight to Fourteen Modulation	PNM	Pulse Number Modulation
EX-OR	Exclusive OR	PPM	Pulse Phase Modulation
FCI	Flux Changes per Inch	PWM	Pulse Width Midulation
FIR	Finite Impulse Response	Q	Parity Data
FP	Front Pluse	R,R1,R2,ect.	Data for Right Channel
FPG	Front Pluse Gate	RAM	Random Access Memory
F	Frequency of Sampling	RPG	Rear Pulse Gate
GF	Galois Field	SCOOP	Self Coupled Optical Pick-up
H&V(Parity)	Horizonal & Veertical	S&H	Sample & Hold
IIR	Infinite Impulse Response	S/N	Signal to Noise Ratio
KB	Kilo Bits	SSG	Standard Signal Generator
L,L1,L2,ect.	Data for Left Channel	SYSCON	SYStem CONtrol
LPF	Low Pass Filter		
LSB	Least Significant Bit		

CASSETTE

ABBREVIATION	EXPLANATION	ABBREVIATION	EXPLANATION
AC	Alternating Current	MIN	MINite
A/D	Analog/Digital	MML	Maximum Modulation Level
AF	Auto Fader	MOL	Maximum Output Level
AMP	AMPlifier	MPX	MultiPlex
AR	Anti Recording	NC	Not connected (No Connection)
AT BIAS	Auto Turning BIAS	NFB	Negative Feed Back
ATT	ATTenuator	NORM	NORMal
BAL	BALance	NR	Noisse Reduction
BEFB	and Elimination Filter	OSC	OSCillator (OSCillation)
BSS	Blank Search System	P	Pulse
CAPM	CAPstan Motor	PB	Play Back
CH	CHannel	QMSS	Quick Memory Search Syatem
COMP	CoMParator	OR	Quick Reverse
CONT	CONTinuance	RCH	Right CHannel
CRLP	Computer Recording Level	REC	RECord (RECording)
	Processing	REV	REVerse
CS	Chip Select	ROT	ROTation
D/A	Digital/Analog	REW	REWind
DC	Direct Current	SEC	SECond
DET	DETector	SELE	SELEctor
DISCRU	DISCRIminator	SENS	SENSitivity
DUB	DUBbing	SEPP	Single Ended Push Pull
EQ	EQualizer	SIG	SIGnal
FF or (F.FWD)	Fast Foward	SPECT	SPECTrum
FLD	FLuoresent Display	STD	STanDard
FREQ	FREQuency	SW	SWitch
FWD	ForWarD	SYS	CONSYStem CONtrol
GND	GrouND	TP	TEST Point
H	High	TRIG	TRIGa
HPF	High Pass Filter	VCA	Voltage Control Attenuator
IND	INDicator	VOL	Volume
IPLS	Instant Program Location System	VOLT	VOLTage
L	Low	VR	Variable Resistor
LCH	Left Channel	XTAL	crysTAL
LEDLight	Emitting Diode	X1	Normal speed
MEMO	MEMOry	X2	Dubble speed
MICOM	MIcroCOMputer		

AMPLIFIEER

ABBREVIATION	EXPLANATION
A	Analog
AC	Alternating Current
AMP	AMPlifier
CD	Compact Disc
COM	COMmon
D	Digital
D/A	Digital to Analog
DAC	Digital to Analog Converter
DAT	Digital Audio Tape recorder
DC	Direct Current
GND	GrouNd
L	Left
LED	Light Emitting Diode
MC	Moving Coil
MM	Moving Magnet
PCB	Printed Circuit Board
R	Right
REG	REGulator
REC	RECord
TR	TRansistor
SW	SWitch
V.AMP	Voltage AMPlifier
V.DISC	Video DISC
VR	Variable Resistance
VTR	Video Tape Recorder

AKAI

MODEL AC-410, 413R, 415K
MODEL AC-610, 613R, 615K

SCHEMATIC DIAGRAMS AND PC BOARDS

TABLE OF CONTENTS

I. BLOCK DIAGRAMS

1. MAIN 3
2. CD 4
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1. CONNECTION DIAGRAM 6
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3. MAIN (600 SERIES) (AC-610, 613R, 615K) 8
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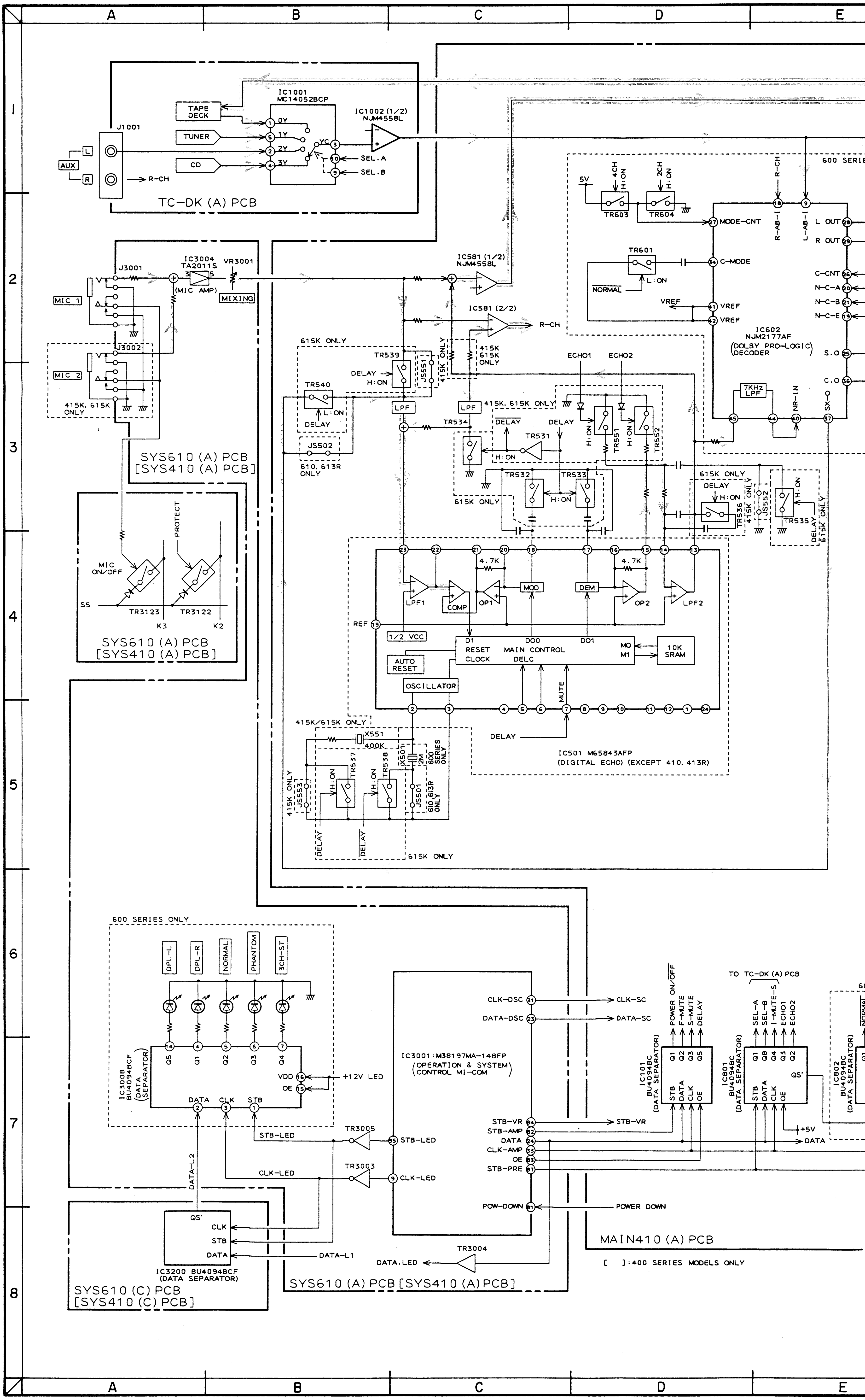
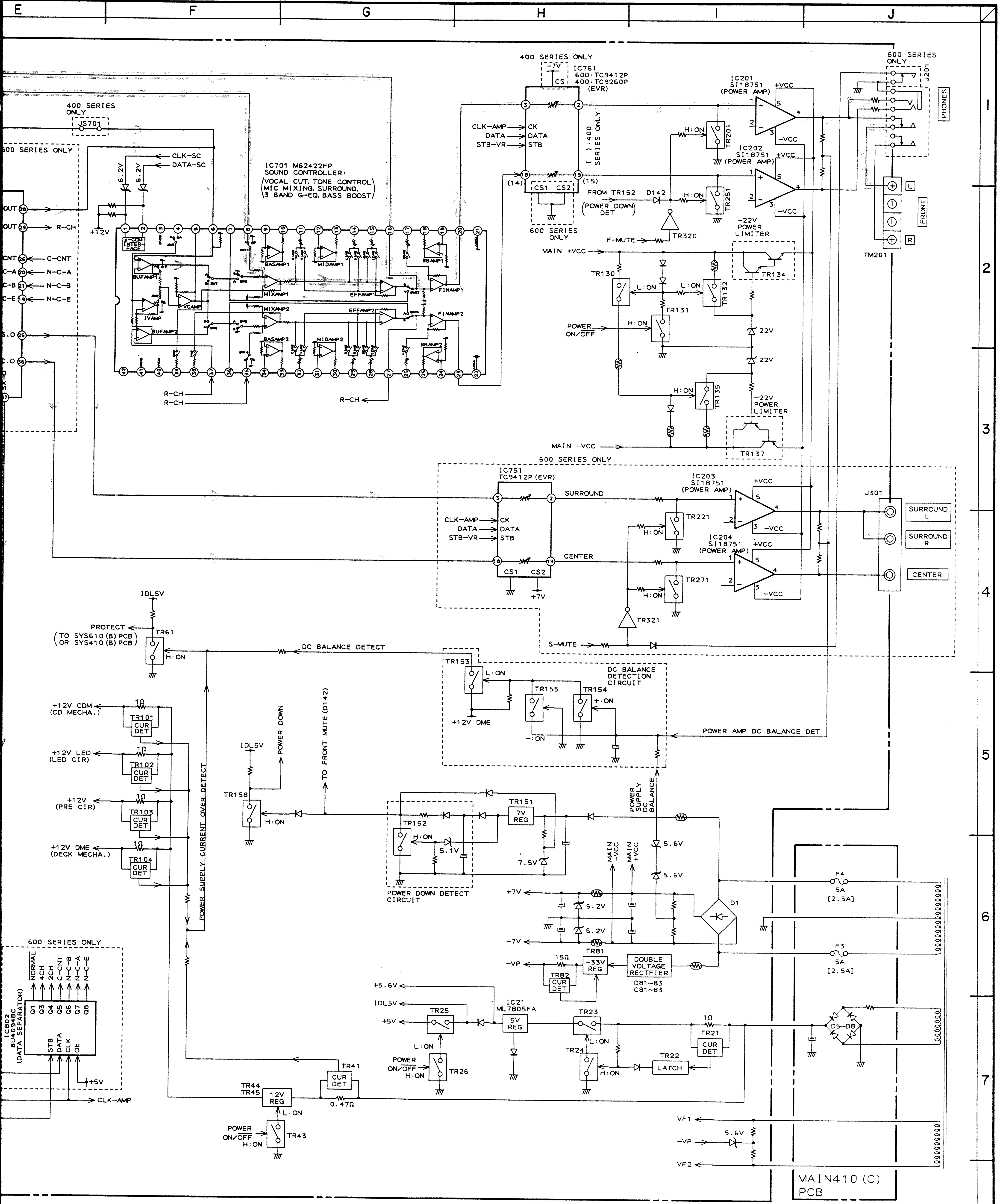
6. SYSCON (600 SERIES) (AC-610, 613R, 615K) 14

III. INFORMATION OF ICs 16

Use these schematic diagrams and PC boards together with the provided service manual.

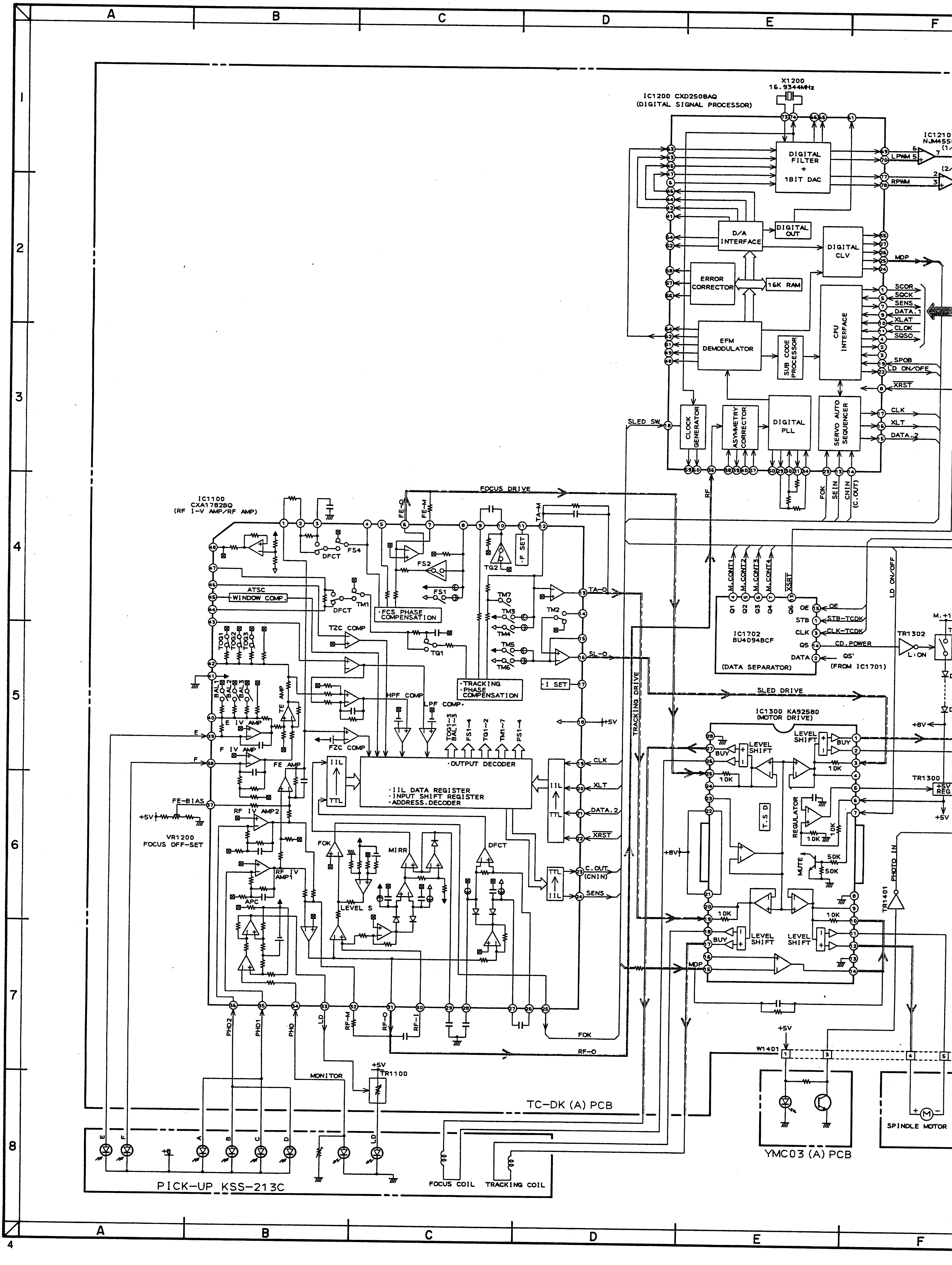

A
B
C
D
E
1
2
3
4
5
6
7
8
IC1001
MC14052BCP
TAPE DECK
TUNER
CD
0Y
1Y
2Y
3Y
YC
SEL.A
SEL.B
IC1002 (1/2)
NJM4558L
J1001
AUX
L
R
R-CH
TC-DK (A) PCB
600 SERIE
5V
4CH H:ON
2CH H:ON
TR603
TR604
R-CH
R-AB-I
L-AB-I
MODE-CNT
L OUT
R OUT
TR601
C-MODE
NORMAL
L:ON
VREF
C-CNT
N-C-A
N-C-B
N-C-E
IC602
NJM2177AF
(DOLBY PRO-LOGIC)
DECODER
S.O
C.O
7KHz LPF
NR-IN
SX-O
J3001
IC3004
TA2011S
(MIC AMP)
VR3001
MIXING
MIC 1
J3002
MIC 2
415K, 615K ONLY
IC581 (1/2)
NJM4558L
IC581 (2/2)
R-CH
615K ONLY
TR539
DELAY H:ON
JS551
415K ONLY
415K 615K ONLY
TR540
L:ON
DELAY
LPF
JS502
610, 613R ONLY
ECHO1
ECHO2
415K, 615K ONLY
TR534
DELAY
TR531
H:ON
TR551
TR552
TR532
TR533
615K ONLY
TR536
JS552
TR535
DELAY 615K ONLY
SYS610 (A) PCB
[SYS410 (A) PCB]
PROTECT
MIC ON/OFF
S5
TR3123
TR3122
K3
K2
SYS610 (A) PCB
[SYS410 (A) PCB]
4.7K
LPF1
COMP
OP1
MOD
DEM
OP2
LPF2
REF
1/2 VCC
D1
RESET
CLOCK
MAIN CONTROL
DELC
DO0
DO1
MO
M1
10K SRAM
AUTO RESET
OSCILLATOR
MUTE
DELAY
IC501 M65843AFP
(DIGITAL ECHO) (EXCEPT 410, 413R)
415K/615K ONLY
X551
400K
X501
2M
600 SERIES ONLY
TR537
TR538
JS553
JS501
610, 613R ONLY
615K ONLY
600 SERIES ONLY
DPL-L
DPL-R
NORMAL
PHANTOM
3CH-ST
IC3008
BU4094BCF
(DATA SEPARATOR)
Q5
Q1
Q2
Q3
Q4
VDD
OE
+12V LED
DATA
CLK
STB
IC3001: M38197MA-148FP
(OPERATION & SYSTEM CONTROL MI-COM)
CLK-DSC
DATA-DSC
CLK-SC
DATA-SC
STB-VR
STB-AMP
DATA
CLK-AMP
OE
STB-PRE
POW-DOWN
POWER DOWN
TR3005
STB-LED
TR3003
CLK-LED
DATA-L2
DATA-L1
TR3004
DATA.LED
QS'
IC3200 BU4094BCF
(DATA SEPARATOR)
SYS610 (C) PCB
[SYS410 (C) PCB]
SYS610 (A) PCB [SYS410 (A) PCB]
MAIN410 (A) PCB
[ ]: 400 SERIES MODELS ONLY
POWER ON/OFF
F-MUTE
S-MUTE
DELAY
IC101
BU4094BC
(DATA SEPARATOR)
TO TC-DK (A) PCB
SEL-A
SEL-B
I-MUTE-S
ECHO1
ECHO2
IC801
BU4094BC
(DATA SEPARATOR)
+5V
IC802
BU4094BC
(DATA SEPARATOR)
NORMAL



E
F
G
H
I
J
1
2
3
4
5
6
7
8
400 SERIES ONLY
JS701
600 SERIES ONLY
CLK-SC
DATA-SC
6.2V
+12V
IC701 M62422FP
SOUND CONTROLLER:
(VOCAL CUT, TONE CONTROL, MIC MIXING, SURROUND, 3 BAND G-EQ, BASS BOOST)
I²C INTER FACE
BUFAMP1
BUFAMP2
IVAMP
VCAMP
BASAMP1
MIDAMP1
BBAMP1
MIXAMP1
EFFAMP1
FINAMP1
MIXAMP2
EFFAMP2
FINAMP2
BASAMP2
MIDAMP2
BBAMP2
R-CH
N-C-A
N-C-B
N-C-E
C-CNT
400 SERIES ONLY
-7V
CS
IC761
600: TC9412P
400: TC9260P
(EVR)
CLK-AMP
DATA
STB-VR
CK
STB
CS1
CS2
( ): 400 SERIES ONLY
600 SERIES ONLY
FROM TR152
(POWER DOWN) DET
D142
F-MUTE
TR320
IC201
SI18751
(POWER AMP)
+VCC
-VCC
IC202
SI18751
(POWER AMP)
TR201
TR251
H: ON
600 SERIES ONLY
J201
PHONES
FRONT
TM201
+22V
POWER
LIMITER
TR134
MAIN +VCC
TR130
L: ON
TR131
TR132
POWER ON/OFF
22V
TR135
-22V
POWER
LIMITER
MAIN -VCC
TR137
IC751
TC9412P (EVR)
SURROUND
CENTER
+7V
IC203
SI18751
(POWER AMP)
IC204
SI18751
(POWER AMP)
TR221
TR271
TR321
S-MUTE
J301
SURROUND L
SURROUND R
CENTER
IDL5V
PROTECT
(TO SYS610 (B) PCB OR SYS410 (B) PCB)
TR61
DC BALANCE DETECT
TR153
DC BALANCE DETECTION CIRCUIT
TR155
TR154
+12V DME
-: ON
+: ON
POWER AMP DC BALANCE DET
+12V CDM (CD MECHA.)
TR101
CUR DET
+12V LED (LED CIR)
TR102
+12V (PRE CIR)
TR103
+12V DME (DECK MECHA.)
TR104
1Ω
POWER SUPPLY CURRENT OVER DETECT
POWER DOWN
TO FRONT MUTE (D142)
TR158
TR151
7V REG
TR152
5.1V
7.5V
POWER DOWN DETECT CIRCUIT
POWER SUPPLY DC BALANCE
MAIN -VCC
MAIN +VCC
5.6V
D1
F4
5A
[2.5A]
F3
+7V
6.2V
-7V
-VP
15Ω
TR81
-33V REG
TR82
DOUBLE VOLTAGE RECTFIER
D81~83
C81~83
+5.6V
IDL5V
+5V
TR25
IC21
ML7805FA
5V REG
TR23
TR21
D5~D8
TR26
TR24
TR22
LATCH
TR41
TR44
TR45
12V REG
0.47Ω
TR43
600 SERIES ONLY
IC802
BU4094BC
(DATA SEPARATOR)
NORMAL
4CH
2CH
Q1
Q3
Q4
Q5
Q6
Q7
Q8
STB
CLK
OE
CLK-AMP
VF1
VF2
MAIN410 (C) PCB

NORMAL SIGNAL LINE (L-CH)
EFFECT SIGNAL LINE (DELAY & D.P.L)
MIC SIGNAL LINE
CENTER & SURROUND SIGNAL LINE

AC-410/413R/415K
AC-610/613R/615K
MAIN
BLOCK DIAGRAM
No.3-1 C104751M
A1


A
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D
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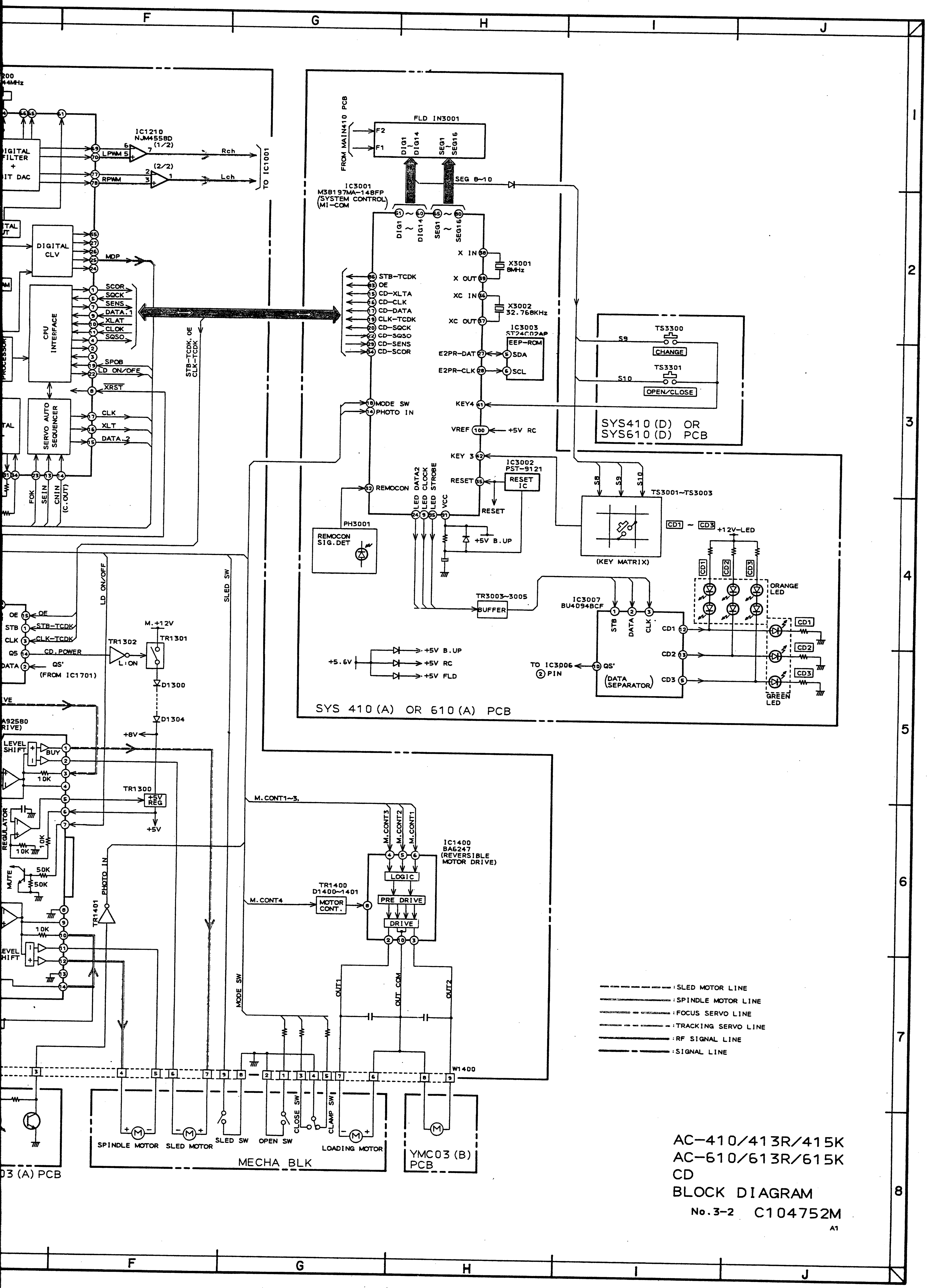
X1200
16.9344MHz
IC1200 CXD2508AQ
(DIGITAL SIGNAL PROCESSOR)
DIGITAL FILTER + 1BIT DAC
IC1210
NJM455
LPWM
RPWM
D/A INTERFACE
DIGITAL OUT
DIGITAL CLV
MDP
ERROR CORRECTOR
16K RAM
SCOR
SQCK
SENS
DATA.1
XLAT
CLOK
SQSO
EFM DEMODULATOR
SUB CODE PROCESSOR
CPU INTERFACE
SPOB
LD ON/OFF
XRST
SLED SW
CLOCK GENERATOR
ASYMMETRY CORRECTOR
DIGITAL PLL
SERVO AUTO SEQUENCER
CLK
XLT
DATA.2
RF
FOK
SEIN
CNIN
(C.OUT)
IC1100
CXA1782BQ
(RF I-V AMP/RF AMP)
FOCUS DRIVE
FE-O
FE-M
TA-M
DFCT
FS4
FS2
FS1
TG2
F SET
TM1
ATSC
WINDOW COMP.
FCS PHASE COMPENSATION
TZC COMP
TG1
TM7
TM3
TM4
TM2
TM5
TM6
TA-O
SL-O
TRACKING PHASE COMPENSATION
I SET
TOG1
TOG2
TOG3
BAL1
BAL2
BAL3
TE AMP
E IV AMP
F IV AMP
FE AMP
HPF COMP
LPF COMP.
FZC COMP
TOG1~3 BAL1~3
FS1~4
TG1~2
TM1~7
PS1~4
+5V
OUTPUT DECODER
IIL
TTL
IIL DATA REGISTER
INPUT SHIFT REGISTER
ADDRESS DECODER
FE-BIAS
+5V
VR1200
FOCUS OFF-SET
RF IV AMP2
RF IV AMP1
APC
FOK
MIRR
LEVEL S
DFCT
C.OUT
(CNIN)
SENS
TRACKING DRIVE
PHD2
PHD1
PHD
LD
RF-M
RF-O
RF-I
FOK
RF-O
MONITOR
+5V
TR1100
TC-DK (A) PCB
M.CONT1
M.CONT2
M.CONT3
M.CONT4
XSRT
LD ON/OFF
OE
STB
CLK
Q5
DATA
STB-TCDK
CLK-TCDK
CD.POWER
QS'
(FROM IC1701)
IC1702
BU4094BCF
(DATA SEPARATOR)
TR1302
L:ON
M.+1
SLED DRIVE
IC1300 KA92580
(MOTOR DRIVE)
LEVEL SHIFT
BUY
10K
+8V
TR1300
+5V REG
+5V
T.S.D
REGULATOR
MUTE
50K
PHOTO IN
TR1401
MDP
+5V
W1401
YMC03 (A) PCB
SPINDLE MOTOR
E
F
+B
A
B
C
D
LD
FOCUS COIL
TRACKING COIL
PICK-UP KSS-213C


F
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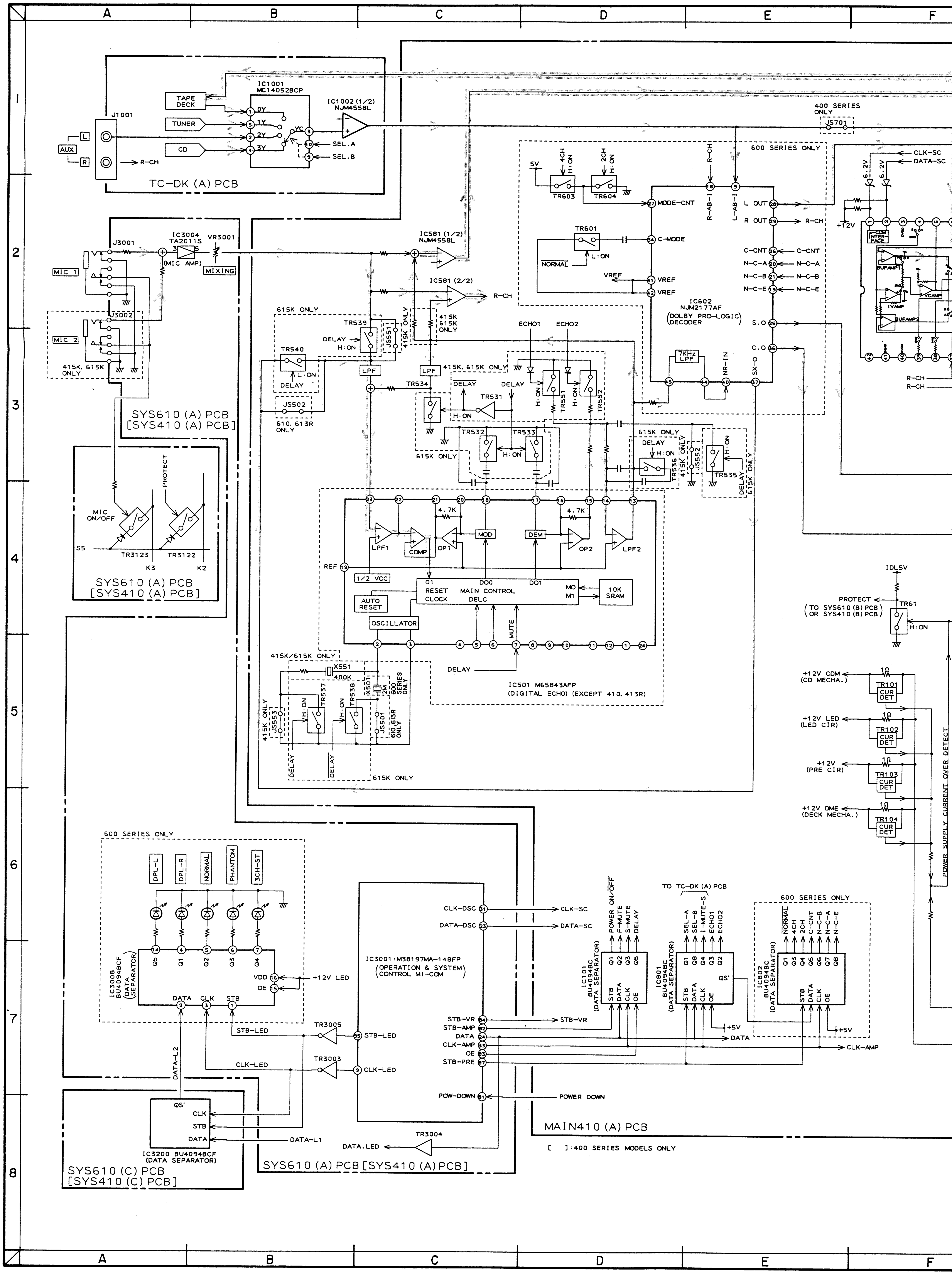
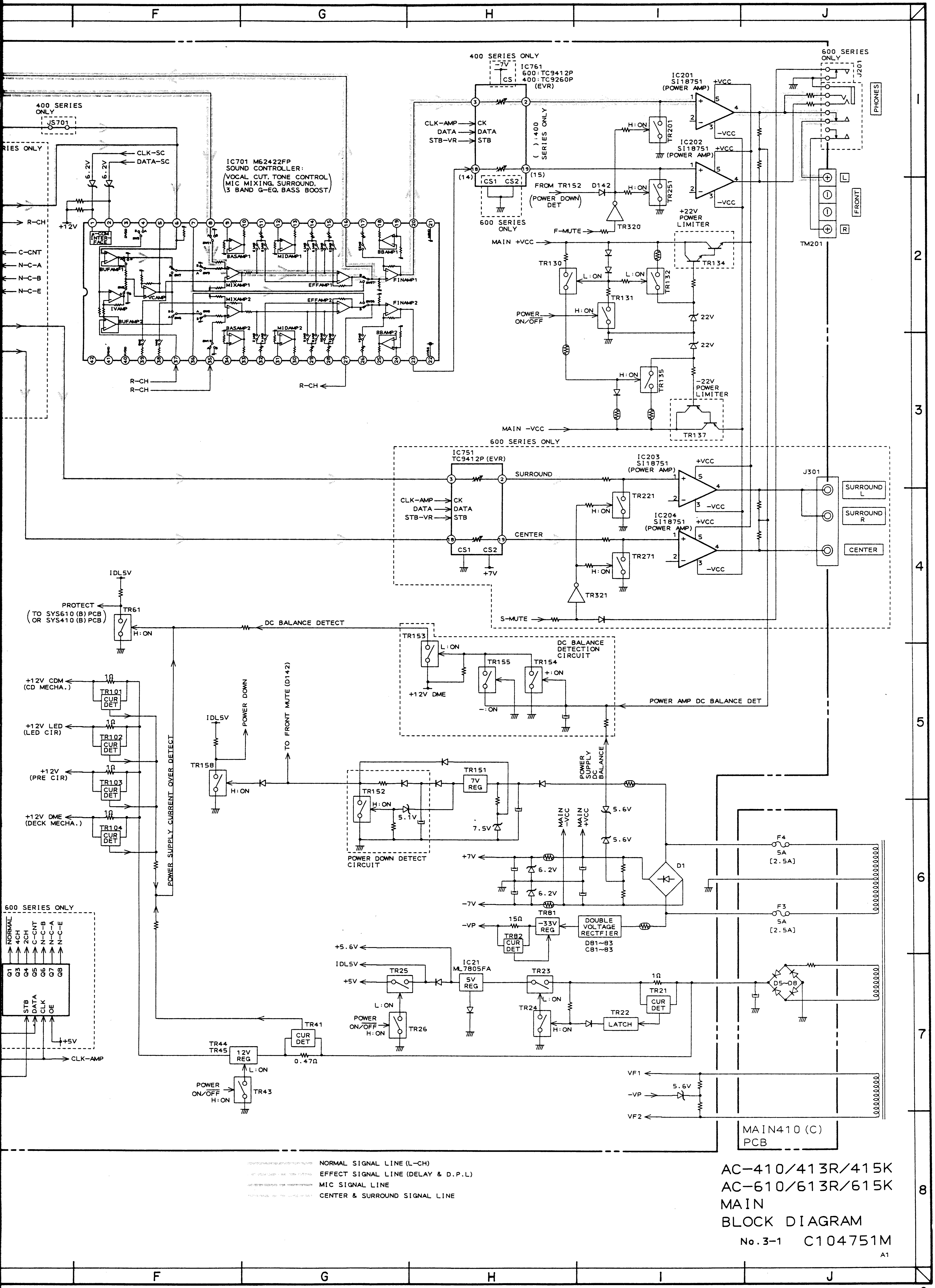
7
8
IC1210
NJM4558D
(1/2)
(2/2)
LPWM
RPWM
Rch
Lch
TO IC1001
DIGITAL FILTER + BIT DAC
DIGITAL CLV
MDP
CPU INTERFACE
SCOR
SQCK
SENS
DATA.1
XLAT
CLOK
SQSO
SPOB
LD ON/OFF
XRST
SERVO AUTO SEQUENCER
CLK
XLT
DATA.2
FOK
SEIN
CNIN (C.OUT)
STB-TCDK, OE
CLK-TCDK
FROM MAIN410 PCB
FLD IN3001
F2
F1
DIG1 ~ DIG14
SEG1 ~ SEG16
SEG 8~10
IC3001
M38197MA-148FP
(SYSTEM CONTROL)
(MI-COM)
X IN
X OUT
XC IN
XC OUT
X3001 8MHz
X3002 32.768KHz
IC3003
ST24C02AP
EEP-ROM
SDA
SCL
E2PR-DAT
E2PR-CLK
STB-TCDK
OE
CD-XLTA
CD-CLK
CD-DATA
CLK-TCDK
CD-SQCK
CD-SQSO
CD-SENS
CD-SCOR
MODE SW
PHOTO IN
KEY4
VREF
+5V RC
KEY 3
RESET
IC3002
PST-9121
RESET IC
REMOCON
LED DATA2
LED CLOCK
LED STROBE
VCC
+5V B.UP
PH3001
REMOCON SIG.DET
TS3300
S9
CHANGE
TS3301
S10
OPEN/CLOSE
SYS410 (D) OR SYS610 (D) PCB
S8
S9
S10
TS3001~TS3003
KEY MATRIX
CD1 ~ CD3
+12V-LED
ORANGE LED
TR3003~3005
BUFFER
IC3007
BU4094BCF
STB
DATA
CLK
CD1
CD2
CD3
QS'
TO IC3006 ② PIN
(DATA SEPARATOR)
GREEN LED
+5.6V
+5V B.UP
+5V RC
+5V FLD
SYS 410 (A) OR 610 (A) PCB
OE
STB
CLK
QS
DATA
STB-TCDK
CLK-TCDK
CD. POWER
QS'
(FROM IC1701)
LD ON/OFF
M.+12V
TR1302
L:ON
TR1301
D1300
D1304
+8V
TR1300
+5V REG
+5V
SLED SW
A92580 (DRIVE)
LEVEL SHIFT
BUY
10K
REGULATOR
MUTE
50K
LEVEL SHIFT
PHOTO IN
TR1401
M.CONT1~3
M.CONT3
M.CONT2
M.CONT1
IC1400
BA6247
(REVERSIBLE MOTOR DRIVE)
LOGIC
PRE DRIVE
DRIVE
M.CONT4
TR1400
D1400~1401
MOTOR CONT.
MODE SW
OUT1
OUT COM
OUT2
W1400
SPINDLE MOTOR
SLED MOTOR
SLED SW
OPEN SW
CLOSE SW
CLAMP SW
LOADING MOTOR
MECHA BLK
YMC03 (B) PCB
03 (A) PCB
: SLED MOTOR LINE
: SPINDLE MOTOR LINE
: FOCUS SERVO LINE
: TRACKING SERVO LINE
: RF SIGNAL LINE
: SIGNAL LINE

AC-410/413R/415K
AC-610/613R/615K
CD
BLOCK DIAGRAM
No.3-2 C104752M
A1

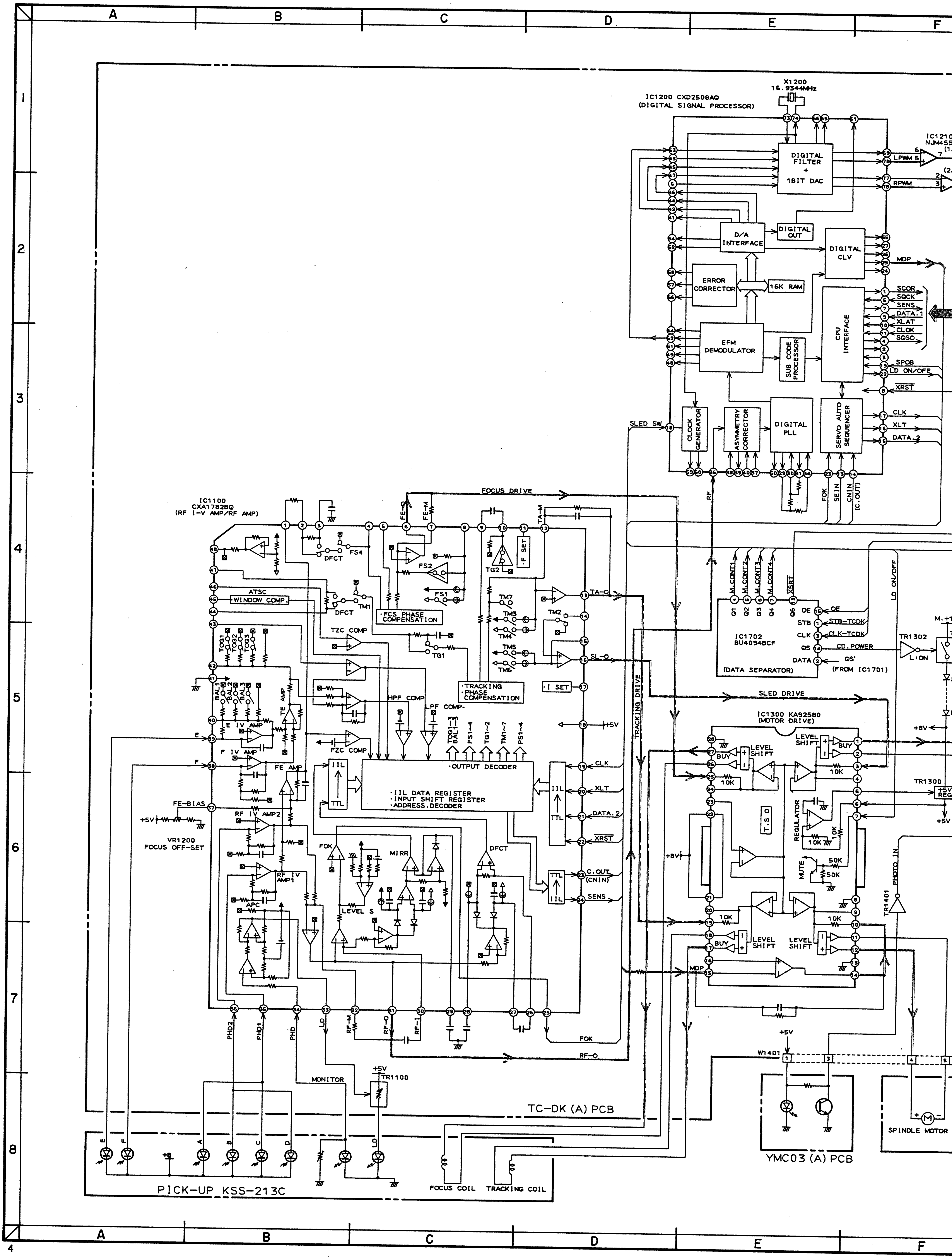

A
B
C
D
E
F
1
2
3
4
5
6
7
8
TAPE DECK
TUNER
CD
J1001
AUX
L
R
R-CH
IC1001 MC14052BCP
0Y
1Y
2Y
3Y
YC
SEL.A
SEL.B
IC1002 (1/2) NJM4558L
TC-DK (A) PCB
400 SERIES ONLY
JS701
600 SERIES ONLY
5V
4CH H:ON
2CH H:ON
TR603
TR604
R-AB-I
R-CH
L-AB-I
MODE-CNT
L OUT
R OUT
R-CH
TR601
C-MODE
NORMAL
L:ON
C-CNT
N-C-A
N-C-B
N-C-E
VREF
IC602 NJM2177AF
(DOLBY PRO-LOGIC DECODER)
S.O
C.O
7KHz LPF
NR-IN
SX-O
CLK-SC
DATA-SC
6.2V
+12V
A-COM INTER FACE
BUFAMP1
IVAMP
VCAMP
BUFAMP2
R-CH
J3001
IC3004 TA2011S
(MIC AMP)
VR3001
MIXING
MIC 1
J3002
MIC 2
415K, 615K ONLY
IC581 (1/2) NJM4558L
IC581 (2/2)
R-CH
615K ONLY
TR539
DELAY H:ON
JS551
415K ONLY
415K 615K ONLY
TR540
L:ON
DELAY
JS502
610, 613R ONLY
LPF
ECHO1
ECHO2
TR534
DELAY
TR531
H:ON
TR551
TR552
TR532
TR533
615K ONLY
TR536
JS552
TR535
DELAY 615K ONLY
SYS610 (A) PCB
[SYS410 (A) PCB]
PROTECT
MIC ON/OFF
S5
TR3123
TR3122
K3
K2
SYS610 (A) PCB
[SYS410 (A) PCB]
4.7K
LPF1
COMP
OP1
MOD
DEM
OP2
LPF2
REF
1/2 VCC
D1
DO0
DO1
RESET
MAIN CONTROL
CLOCK
DELC
MO
M1
10K SRAM
AUTO RESET
OSCILLATOR
MUTE
DELAY
IC501 M65843AFP
(DIGITAL ECHO) (EXCEPT 410, 413R)
415K/615K ONLY
X551
400K
X501
2M
600 SERIES ONLY
TR537
TR538
JS553
JS501
610,613R ONLY
615K ONLY
IDL5V
PROTECT
(TO SYS610 (B) PCB OR SYS410 (B) PCB)
TR61
H:ON
+12V CDM (CD MECHA.)
TR101 CUR DET
+12V LED (LED CIR)
TR102 CUR DET
+12V (PRE CIR)
TR103 CUR DET
+12V DME (DECK MECHA.)
TR104 CUR DET
1Ω
POWER SUPPLY CURRENT OVER DETECT
600 SERIES ONLY
DPL-L
DPL-R
NORMAL
PHANTOM
3CH-ST
IC3008 BU4094BCF (DATA SEPARATOR)
Q5
Q1
Q2
Q3
Q4
VDD
OE
+12V LED
DATA
CLK
STB
IC3001: M38197MA-148FP
(OPERATION & SYSTEM CONTROL MI-COM)
CLK-DSC
DATA-DSC
CLK-SC
DATA-SC
STB-VR
STB-AMP
DATA
CLK-AMP
OE
STB-PRE
STB-LED
CLK-LED
POW-DOWN
POWER DOWN
TR3005
TR3003
TR3004
DATA.LED
DATA-L2
DATA-L1
IC3200 BU4094BCF (DATA SEPARATOR)
QS'
SYS610 (C) PCB
[SYS410 (C) PCB]
SYS610 (A) PCB [SYS410 (A) PCB]
MAIN410 (A) PCB
[ ]:400 SERIES MODELS ONLY
IC101 BU4094BC (DATA SEPARATOR)
POWER ON/OFF
F-MUTE
S-MUTE
DELAY
TO TC-DK (A) PCB
IC801 BU4094BC (DATA SEPARATOR)
SEL-A
SEL-B
I-MUTE-S
ECHO1
ECHO2
+5V
IC802 BU4094BC (DATA SEPARATOR)
NORMAL
4CH
2CH
C-CNT
N-C-B
N-C-A
N-C-E
CLK-AMP


F
G
H
I
J
1
2
3
4
5
6
7
8
400 SERIES ONLY
JS701
RIES ONLY
CLK-SC
DATA-SC
6.2V
R-CH
+12V
C-CNT
N-C-A
N-C-B
N-C-E
IC701 M62422FP
SOUND CONTROLLER:
(VOCAL CUT, TONE CONTROL, MIC MIXING, SURROUND, 3 BAND G-EQ, BASS BOOST)
μ-COM INTER FACE
BUFAMP1
BUFAMP2
IVAMP
VCAMP
BASAMP1
MIDAMP1
BBAMP1
MIXAMP1
EFFAMP1
FINAMP1
MIXAMP2
EFFAMP2
FINAMP2
BASAMP2
MIDAMP2
BBAMP2
R-CH
R-CH
R-CH
400 SERIES ONLY
-7V
CS
IC761
600:TC9412P
400:TC9260P
(EVR)
CLK-AMP
DATA
STB-VR
CK
DATA
STB
( ):400 SERIES ONLY
(14)
(15)
CS1
CS2
600 SERIES ONLY
IC201
SI18751
(POWER AMP)
+VCC
-VCC
H:ON
TR201
IC202
SI18751
(POWER AMP)
TR251
FROM TR152
D142
(POWER DOWN DET)
F-MUTE
TR320
+22V POWER LIMITER
MAIN +VCC
TR130
L:ON
TR132
TR134
TR131
POWER ON/OFF
22V
22V
TR135
-22V POWER LIMITER
MAIN -VCC
TR137
600 SERIES ONLY
J201
PHONES
FRONT
L
R
TM201
600 SERIES ONLY
IC751
TC9412P (EVR)
SURROUND
CENTER
CS1
CS2
+7V
IC203
SI18751
(POWER AMP)
TR221
IC204
SI18751
(POWER AMP)
TR271
TR321
S-MUTE
J301
SURROUND L
SURROUND R
CENTER
IDL5V
PROTECT
(TO SYS610 (B) PCB OR SYS410 (B) PCB)
TR61
H:ON
DC BALANCE DETECT
TR153
L:ON
DC BALANCE DETECTION CIRCUIT
TR155
TR154
+:ON
-:ON
+12V DME
POWER AMP DC BALANCE DET
+12V CDM (CD MECHA.)
TR101 CUR DET
+12V LED (LED CIR)
TR102 CUR DET
+12V (PRE CIR)
TR103 CUR DET
+12V DME (DECK MECHA.)
TR104 CUR DET
1Ω
POWER SUPPLY CURRENT OVER DETECT
IDL5V
POWER DOWN
TO FRONT MUTE (D142)
TR158
H:ON
TR151
7V REG
TR152
H:ON
5.1V
7.5V
POWER DOWN DETECT CIRCUIT
POWER SUPPLY DC BALANCE
MAIN -VCC
MAIN +VCC
5.6V
5.6V
+7V
6.2V
6.2V
-7V
D1
F4
5A
[2.5A]
F3
5A
[2.5A]
TR81
-VP
15Ω
-33V REG
TR82 CUR DET
DOUBLE VOLTAGE RECTFIER
D81~83
C81~83
+5.6V
IDL5V
+5V
TR25
IC21
ML7805FA
5V REG
TR23
1Ω
TR21 CUR DET
D5~D8
L:ON
TR24
H:ON
TR22 LATCH
POWER ON/OFF H:ON
TR26
TR41 CUR DET
0.47Ω
TR44
TR45
12V REG
L:ON
POWER ON/OFF H:ON
TR43
VF1
-VP
5.6V
VF2
600 SERIES ONLY
NORMAL
4CH
2CH
C-CNT
N-C-B
N-C-A
N-C-E
Q1
Q3
Q4
Q5
Q6
Q7
Q8
STB
DATA
CLK
OE
+5V
CLK-AMP
MAIN410 (C) PCB
NORMAL SIGNAL LINE (L-CH)
EFFECT SIGNAL LINE (DELAY & D.P.L)
MIC SIGNAL LINE
CENTER & SURROUND SIGNAL LINE

AC-410/413R/415K
AC-610/613R/615K
MAIN
BLOCK DIAGRAM

No.3-1 C104751M

A1


A
B
C
D
E
F
1
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7
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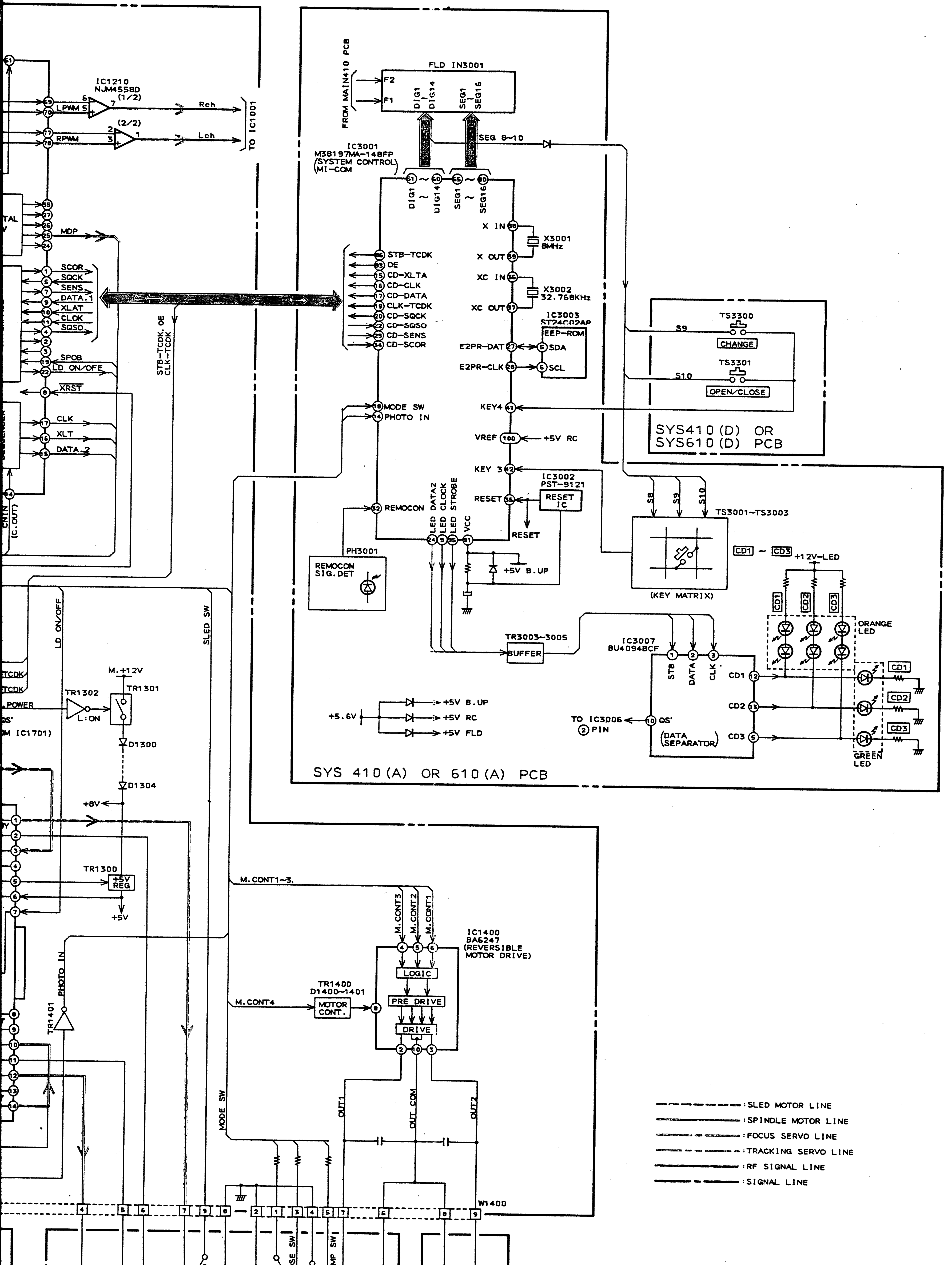
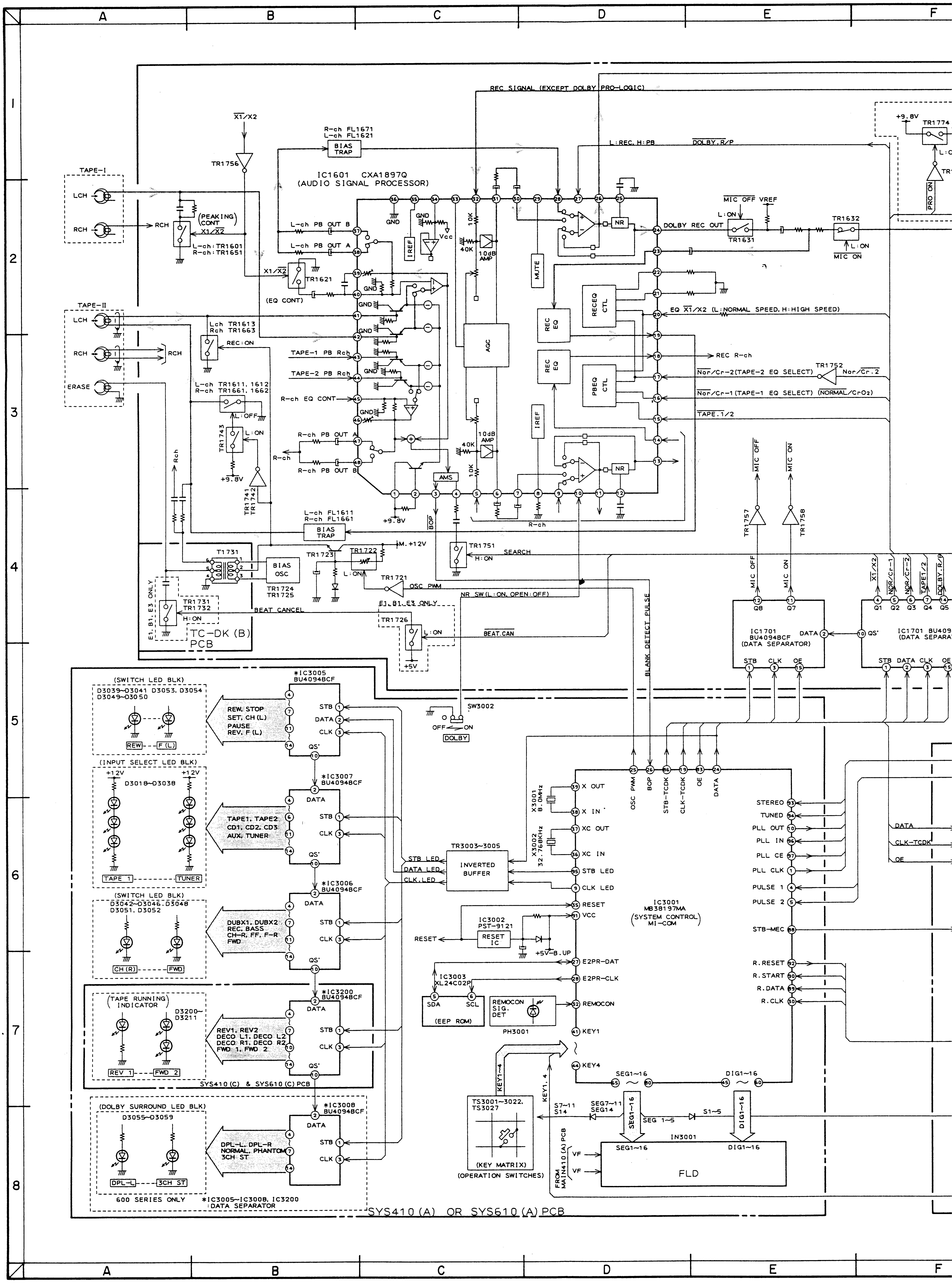
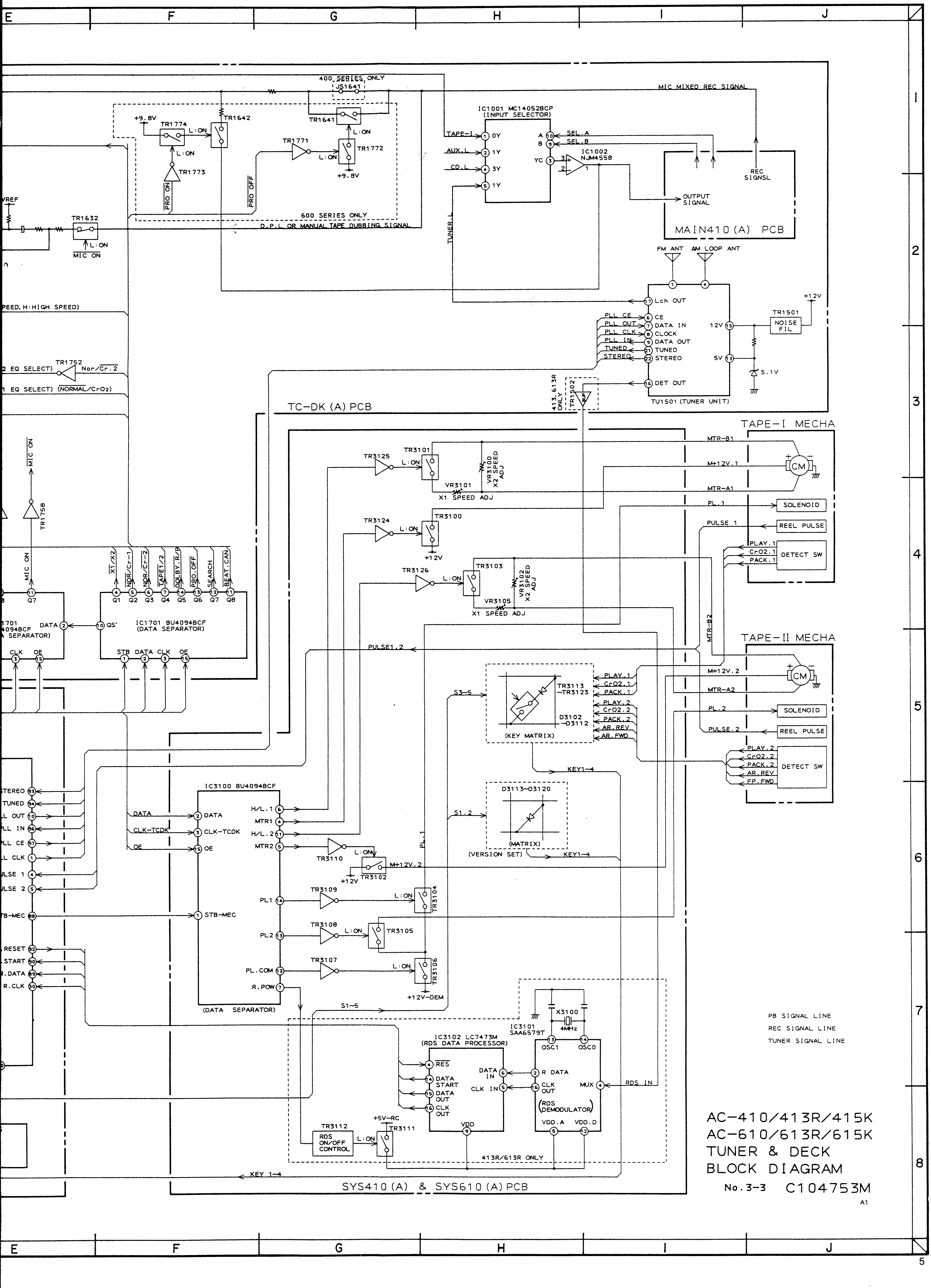
IC1200 CXD2508AQ
(DIGITAL SIGNAL PROCESSOR)
X1200
16.9344MHz
DIGITAL FILTER + 1BIT DAC
D/A INTERFACE
DIGITAL OUT
DIGITAL CLV
ERROR CORRECTOR
16K RAM
EFM DEMODULATOR
SUB CODE PROCESSOR
CPU INTERFACE
CLOCK GENERATOR
ASYMMETRY CORRECTOR
DIGITAL PLL
SERVO AUTO SEQUENCER
LPWM 5
RPWM
MDP
SCOR
SQCK
SENS
DATA.1
XLAT
CLOK
SQSO
SPOB
LD ON/OFF
XRST
CLK
XLT
DATA.2
SLED SW
RF
FOK
SEIN
CNIN (C.OUT)
IC1210 NJM455
IC1100 CXA1782BQ
(RF I-V AMP/RF AMP)
FOCUS DRIVE
FE-O
FE-M
TA-M
FS4
DFCT
FS2
FS1
TG2
F SET
ATSC
WINDOW COMP.
TM1
FCS PHASE COMPENSATION
TZC COMP
TG1
TM7
TM3
TM4
TM2
TM5
TM6
TA-O
SL-O
TRACKING PHASE COMPENSATION
I SET
TOG1
TOG2
TOG3
BAL1
BAL2
BAL3
TE AMP
E IV AMP
F IV AMP
FE AMP
HPF COMP
LPF COMP
FZC COMP
TOG1~3 BAL1~4
FS1~4
TG1~2
TM1~7
PS1~4
IIL TTL
OUTPUT DECODER
IIL DATA REGISTER
INPUT SHIFT REGISTER
ADDRESS DECODER
+5V
CLK
XLT
DATA.2
XRST
C.OUT (CNIN)
SENS
FE-BIAS
VR1200 FOCUS OFF-SET
RF IV AMP2
RF IV AMP1
APC
FOK
MIRR
LEVEL S
DFCT
PHD2
PHD1
PHD
LD
RF-M
RF-O
RF-I
FOK
RF-O
MONITOR
TR1100
TC-DK (A) PCB
TRACKING DRIVE
SLED DRIVE
M.CONT1
M.CONT2
M.CONT3
M.CONT4
XSRT
Q1 Q2 Q3 Q4 Q6
OE
STB
CLK
Q5
DATA
STB-TCDK
CLK-TCDK
CD.POWER
QS'
(FROM IC1701)
IC1702 BU4094BCF
(DATA SEPARATOR)
TR1302
L:ON
M.+1
LD ON/OFF
IC1300 KA9258D
(MOTOR DRIVE)
LEVEL SHIFT
BUY
10K
T.S.D
REGULATOR
MUTE
50K
+8V
+8V
TR1300
+5V REG
+5V
PHOTO IN
TR1401
MDP
W1401
YMC03 (A) PCB
SPINDLE MOTOR
E F +B A B C D LD
PICK-UP KSS-213C
FOCUS COIL
TRACKING COIL


IC1210
NJM4558D
(1/2)
(2/2)
LPWM
RPWM
Rch
Lch
TO IC1001
MDP
SCOR
SQCK
SENS
DATA.1
XLAT
CLOK
SQSO
SPOB
LD ON/OFF
XRST
CLK
XLT
DATA.2
CNIN (C.OUT)
STB-TCDK, OE
CLK-TCDK
FROM MAIN410 PCB
FLD IN3001
F2
F1
DIG1 ~ DIG14
SEG1 ~ SEG16
SEG 8~10
IC3001
M38197MA-148FP
(SYSTEM CONTROL)
(MI-COM)
X IN
X OUT
XC IN
XC OUT
X3001
8MHz
X3002
32.768KHz
IC3003
ST24C02AP
EEP-ROM
SDA
SCL
E2PR-DAT
E2PR-CLK
STB-TCDK
OE
CD-XLTA
CD-CLK
CD-DATA
CLK-TCDK
CD-SQCK
CD-SQSO
CD-SENS
CD-SCOR
MODE SW
PHOTO IN
KEY4
VREF
+5V RC
KEY 3
RESET
IC3002
PST-9121
RESET IC
REMOCON
LED DATA2
LED CLOCK
LED STROBE
VCC
PH3001
REMOCON SIG.DET
+5V B.UP
TR3003~3005
BUFFER
IC3007
BU4094BCF
STB
DATA
CLK
CD1
CD2
CD3
QS'
TO IC3006 ② PIN
(DATA SEPARATOR)
+5.6V
+5V B.UP
+5V RC
+5V FLD
SYS 410 (A) OR 610 (A) PCB
TS3300
S9
CHANGE
TS3301
S10
OPEN/CLOSE
SYS410 (D) OR
SYS610 (D) PCB
S8
S9
S10
TS3001~TS3003
(KEY MATRIX)
CD1 ~ CD3
+12V-LED
ORANGE LED
GREEN LED
LD ON/OFF
SLED SW
TCDK
TCDK
POWER
QS'
IC1701)
M.+12V
TR1302
L:ON
TR1301
D1300
D1304
+8V
TR1300
+5V REG
+5V
PHOTO IN
TR1401
M.CONT1~3.
M.CONT3
M.CONT2
M.CONT1
IC1400
BA6247
(REVERSIBLE MOTOR DRIVE)
LOGIC
PRE DRIVE
DRIVE
M.CONT4
TR1400
D1400~1401
MOTOR CONT.
OUT1
OUT COM
OUT2
MODE SW
W1400
SPINDLE MOTOR
SLED MOTOR
SLED SW
OPEN SW
CLOSE SW
CLAMP SW
LOADING MOTOR
MECHA BLK
YMC03 (B) PCB
:SLED MOTOR LINE
:SPINDLE MOTOR LINE
:FOCUS SERVO LINE
:TRACKING SERVO LINE
:RF SIGNAL LINE
:SIGNAL LINE
F
G
H
I
J
1
2
3
4
5
6
7
8

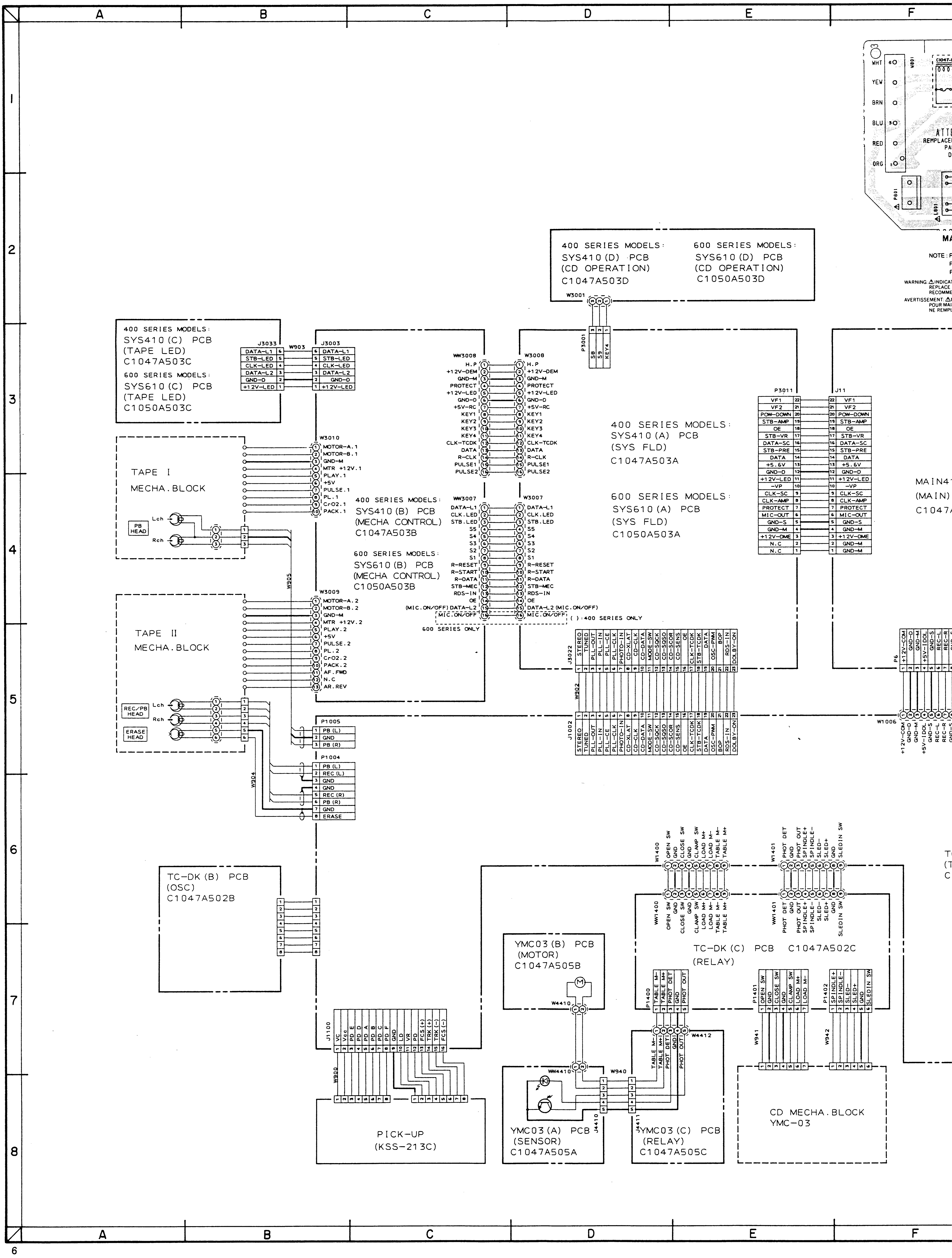
AC-410/413R/415K
AC-610/613R/615K
CD
BLOCK DIAGRAM
No.3-2 C104752M
A1

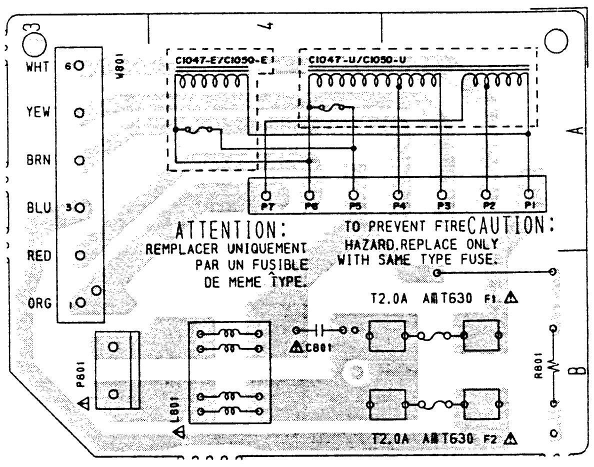


A
B
C
D
E
F
1
2
3
4
5
6
7
8
REC SIGNAL (EXCEPT DOLBY PRO-LOGIC)
X1/X2
TR1756
R-ch FL1671
L-ch FL1621
BIAS TRAP
IC1601 CXA1897Q
(AUDIO SIGNAL PROCESSOR)
L:REC, H:PB
DOLBY.R/P
+9.8V
TR1774
PRO ON
TAPE-I
LCH
RCH
(PEAKING CONT)
X1/X2
L-ch:TR1601
R-ch:TR1651
L-ch PB OUT B
L-ch PB OUT A
X1/X2
TR1621
(EQ CONT)
GND
IREF
Vcc
10K
40K
10dB AMP
MUTE
NR
DOLBY REC OUT
MIC OFF VREF
L:ON
TR1631
TR1632
MIC ON
TAPE-II
ERASE
Lch TR1613
Rch TR1663
REC:ON
TAPE-1 PB Rch
TAPE-2 PB Rch
AGC
REC EQ
RECEQ CTL
PBEQ CTL
EQ X1/X2 (L:NORMAL SPEED, H:HIGH SPEED)
REC R-ch
Nor/Cr-2 (TAPE-2 EQ SELECT)
TR1752
Nor/Cr.2
Nor/Cr-1 (TAPE-1 EQ SELECT) (NORMAL/CrO2)
TAPE.1/2
L-ch TR1611, 1612
R-ch TR1661, 1662
R-ch EQ CONT
L:OFF
TR1743
L:ON
+9.8V
TR1741
TR1742
R-ch PB OUT A
R-ch PB OUT B
R-ch
AMS
IREF
MIC OFF
MIC ON
TR1757
TR1758
L-ch FL1611
R-ch FL1661
BIAS TRAP
+9.8V
BOP
R-ch
T1731
BIAS OSC
TR1724
TR1725
TR1723
TR1722
M.+12V
L:ON
TR1721
OSC PWM
TR1751
H:ON
SEARCH
NR SW (L:ON, OPEN:OFF)
BLANK DETECT PULSE
E1, B1, E3 ONLY
TR1731
TR1732
H:ON
BEAT CANCEL
E1, B1, E3 ONLY
TR1726
L:ON
BEAT.CAN
+5V
TC-DK (B) PCB
Q8
Q7
IC1701
BU4094BCF
(DATA SEPARATOR)
DATA
QS'
STB
CLK
OE
X1/X2
NOR/Cr-1
NOR/Cr-2
TAPE1/2
DOLBY.R/P
Q1
Q2
Q3
Q4
Q5
IC1701 BU409
(DATA SEPARAT
STB DATA CLK OE
(SWITCH LED BLK)
D3039~D3041 D3053, D3054
D3049~D3050
REW
F (L)
*IC3005
BU4094BCF
REW, STOP
SET, CH (L)
PAUSE
REV, F (L)
STB
DATA
CLK
QS'
SW3002
OFF
ON
DOLBY
(INPUT SELECT LED BLK)
+12V
D3018~D3038
+12V
*IC3007
BU4094BCF
TAPE1, TAPE2
CD1, CD2, CD3
AUX, TUNER
TAPE 1
TUNER
(SWITCH LED BLK)
D3042~D3046, D3048
D3051, D3052
*IC3006
BU4094BCF
DUBX1, DUBX2
REC, BASS
CH-R, FF, F-R
FWD
CH (R)
FWD
(TAPE RUNNING INDICATOR)
D3200~D3211
*IC3200
BU4094BCF
REV1, REV2
DECO L1, DECO L2
DECO R1, DECO R2
FWD 1, FWD 2
REV 1
FWD 2
SYS410 (C) & SYS610 (C) PCB
(DOLBY SURROUND LED BLK)
D3055~D3059
*IC3008
BU4094BCF
DPL-L, DPL-R
NORMAL, PHANTOM
3CH ST
DPL-L
3CH ST
600 SERIES ONLY
*IC3005~IC3008, IC3200
:DATA SEPARATOR
SYS410 (A) OR SYS610 (A) PCB
STB LED
DATA LED
CLK LED
TR3003~3005
INVERTED BUFFER
OSC PWM
BOP
STB-TCDK
CLK-TCDK
OE
DATA
X3001
8.0MHz
X OUT
X IN
X3002
32.768KHz
XC OUT
XC IN
STB LED
CLK LED
RESET
VCC
IC3002
PST-9121
RESET IC
RESET
+5V-B.UP
E2PR-DAT
E2PR-CLK
IC3003
XL24C02P
SDA
SCL
(EEP ROM)
REMOCON SIG. DET
PH3001
REMOCON
KEY1
KEY4
IC3001
MB38197MA
(SYSTEM CONTROL MI-COM)
STEREO
TUNED
PLL OUT
PLL IN
PLL CE
PLL CLK
PULSE 1
PULSE 2
STB-MEC
R.RESET
R.START
R.DATA
R.CLK
DATA
CLK-TCDK
OE
SEG1~16
DIG1~16
KEY1~4
KEY1, 4
TS3001~3022,
TS3027
(KEY MATRIX)
(OPERATION SWITCHES)
S7~11
S14
SEG7~11
SEG14
SEG1~16
SEG 1~5
S1~5
DIG1~16
IN3001
SEG1~16
DIG1~16
FROM MAIN410 (A) PCB
VF
VF
FLD


E
F
G
H
I
J
1
2
3
4
5
6
7
8
400 SERIES ONLY
JS1641
MIC MIXED REC SIGNAL
+9.8V
TR1774
L:ON
TR1642
TR1641
L:ON
TR1771
TR1772
L:ON
+9.8V
TR1773
PRO ON
PRO OFF
600 SERIES ONLY
D.P.L OR MANUAL TAPE DUBBING SIGNAL
VREF
TR1632
L:ON
MIC ON
IC1001 MC14052BCP
(INPUT SELECTOR)
TAPE-I
AUX.L
CD.L
TUNER.L
0Y
1Y
3Y
1Y
A
B
YC
SEL.A
SEL.B
IC1002
NJM4558
REC SIGNSL
OUTPUT SIGNAL
MAIN410 (A) PCB
FM ANT
AM LOOP ANT
Lch OUT
PLL CE
PLL OUT
PLL CLK
PLL IN
TUNED
STEREO
CE
DATA IN
CLOCK
DATA OUT
TUNED
STEREO
DET OUT
12V
5V
+12V
TR1501
NOISE FIL
5.1V
TU1501 (TUNER UNIT)
413, 613R ONLY
TR1502
PEED, H:HIGH SPEED)
2 EQ SELECT)
TR1752
Nor/Cr.2
1 EQ SELECT) (NORMAL/CrO2)
TC-DK (A) PCB
TAPE-I MECHA
MTR-B1
M+12V.1
MTR-A1
CM
TR3125
TR3101
L:ON
VR3100 X2 SPEED ADJ
VR3101
X1 SPEED ADJ
PL.1
SOLENOID
PULSE 1
REEL PULSE
TR3124
L:ON
TR3100
+12V
PLAY.1
CrO2.1
PACK.1
DETECT SW
TR3126
L:ON
TR3103
VR3102 X2 SPEED ADJ
VR3105
X1 SPEED ADJ
MIC ON
TR1758
MIC ON
Q7
XT/X2
NOR/Cr-1
NOR/Cr-2
TAPE1/2
DOLBY.R/P
PRO.OFF
SEARCH
BEAT.CAN
Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8
1701
4094BCF
SEPARATOR)
DATA
QS'
IC1701 BU4094BCF
(DATA SEPARATOR)
CLK
OE
STB
DATA
CLK
OE
MTR-B2
TAPE-II MECHA
PULSE1.2
M+12V.2
MTR-A2
PLAY.1
CrO2.1
PACK.1
TR3113 ~TR3123
PLAY.2
CrO2.2
PACK.2
AR.REV
AR.FWD
D3102 ~D3112
S3~5
(KEY MATRIX)
PL.2
SOLENOID
PULSE.2
REEL PULSE
PLAY.2
CrO2.2
PACK.2
AR.REV
FP.FWD
DETECT SW
KEY1~4
STEREO
TUNED
LL OUT
LL IN
LL CE
LL CLK
LSE 1
LSE 2
TB-MEC
RESET
START
R.DATA
R.CLK
IC3100 BU4094BCF
DATA
DATA
CLK-TCDK
CLK-TCDK
OE
OE
STB-MEC
H/L.1
MTR1
H/L.2
MTR2
PL1
PL2
PL.COM
R.POW
(DATA SEPARATOR)
D3113~D3120
S1.2
(MATRIX)
(VERSION SET)
KEY1~4
TR3110
L:ON
M+12V.2
+12V
TR3102
PL.1
TR3109
L:ON
TR3104
TR3108
L:ON
TR3105
TR3107
L:ON
TR3106
+12V-DEM
S1~5
IC3101
SAA6579T
X3100
4MHz
OSC1
OSCO
IC3102 LC7473M
(RDS DATA PROCESSOR)
RES
DATA START
DATA OUT
CLK OUT
DATA IN
CLK IN
VDD
R DATA
CLK OUT
(RDS DEMODULATOR)
MUX
RDS IN
VDD.A
VDD.D
TR3112
RDS ON/OFF CONTROL
L:ON
+5V-RC
TR3111
413R/613R ONLY
KEY 1~4
SYS410 (A) & SYS610 (A) PCB
PB SIGNAL LINE
REC SIGNAL LINE
TUNER SIGNAL LINE

AC-410/413R/415K
AC-610/613R/615K
TUNER & DECK
BLOCK DIAGRAM
No.3-3 C104753M
A1


A
B
C
D
E
F
1
2
3
4
5
6
7
8
400 SERIES MODELS:
SYS410 (D) PCB
(CD OPERATION)
C1047A503D
600 SERIES MODELS:
SYS610 (D) PCB
(CD OPERATION)
C1050A503D
W3001
P3001
S8
S9
KEY4
400 SERIES MODELS:
SYS410 (C) PCB
(TAPE LED)
C1047A503C
600 SERIES MODELS:
SYS610 (C) PCB
(TAPE LED)
C1050A503C
J3033
W903
J3003
DATA-L1
STB-LED
CLK-LED
DATA-L2
GND-D
+12V-LED
WW3008
W3008
H.P
+12V-DEM
GND-M
PROTECT
+12V-LED
GND-D
+5V-RC
KEY1
KEY2
KEY3
KEY4
CLK-TCDK
DATA
R-CLK
PULSE1
PULSE2
400 SERIES MODELS:
SYS410 (A) PCB
(SYS FLD)
C1047A503A
600 SERIES MODELS:
SYS610 (A) PCB
(SYS FLD)
C1050A503A
P3011
J11
VF1
VF2
POW-DOWN
STB-AMP
OE
STB-VR
DATA-SC
STB-PRE
DATA
+5.6V
GND-D
+12V-LED
-VP
CLK-SC
CLK-AMP
PROTECT
MIC-OUT
GND-S
GND-M
+12V-DME
N.C
MAIN4
(MAIN)
C1047
TAPE I
MECHA.BLOCK
W3010
MOTOR-A.1
MOTOR-B.1
GND-M
MTR +12V.1
PLAY.1
+5V
PULSE.1
PL.1
CrO2.1
PACK.1
PB HEAD
Lch
Rch
400 SERIES MODELS:
SYS410 (B) PCB
(MECHA CONTROL)
C1047A503B
600 SERIES MODELS:
SYS610 (B) PCB
(MECHA CONTROL)
C1050A503B
WW3007
W3007
DATA-L1
CLK.LED
STB.LED
S5
S4
S3
S2
S1
R-RESET
R-START
R-DATA
STB-MEC
RDS-IN
OE
(MIC.ON/OFF) DATA-L2
MIC.ON/OFF
DATA-L2 (MIC.ON/OFF)
( ):400 SERIES ONLY
600 SERIES ONLY
W905
TAPE II
MECHA.BLOCK
W3009
MOTOR-A.2
MOTOR-B.2
GND-M
MTR +12V.2
PLAY.2
+5V
PULSE.2
PL.2
CrO2.2
PACK.2
AF.FWD
N.C
AR.REV
REC/PB HEAD
ERASE HEAD
J3022
W902
J1002
STEREO
TUNED
PLL-OUT
PLL-IN
PLL-CE
PLL-CLK
PHOTO-IN
CD-XLAT
CD-CLK
CD-DATA
MODE-SW
CD-SQCK
CD-SQSO
CD-SCOR
CD-SENS
OE
CLK-TCDK
STB-TCDK
DATA
OSC-PWM
BOP
RDS-IN
DOLBY-ON
P6
W1006
+12V-COM
GND-D
GND-M
+5V-IDOL
GND-S
REC-L
REC-R
P1005
PB (L)
GND
PB (R)
P1004
PB (L)
REC (L)
GND
GND
REC (R)
PB (R)
GND
ERASE
W904
TC-DK (B) PCB
(OSC)
C1047A502B
W1400
WW1400
OPEN SW
GND
CLOSE SW
GND
CLAMP SW
LOAD M+
LOAD M-
TABLE M-
TABLE M+
W1401
WW1401
PHOT DET
GND
PHOT OUT
SPINDLE+
SPINDLE-
SLED-
SLED+
GND
SLEDIN SW
TC-DK (C) PCB C1047A502C
(RELAY)
YMC03 (B) PCB
(MOTOR)
C1047A505B
W4410
WW4410
P1400
TABLE M-
TABLE M+
PHOT DET
GND
PHOT OUT
P1401
P1402
W4412
W940
W941
W942
J1100
VC
Vcc
PD E
PD D
PD A
PD B
PD C
PD F
GND
LD
VR
PD
FCS (+)
TRK (+)
TRK (-)
FCS (-)
W900
PICK-UP
(KSS-213C)
YMC03 (A) PCB
(SENSOR)
C1047A505A
J4410
J4411
YMC03 (C) PCB
(RELAY)
C1047A505C
CD MECHA.BLOCK
YMC-03
WHT
YEW
BRN
BLU
RED
ORG
W801
P801
L801
ATT
REMPLACE
MA
NOTE
WARNING
AVERTISSEMENT
TC
(T
C

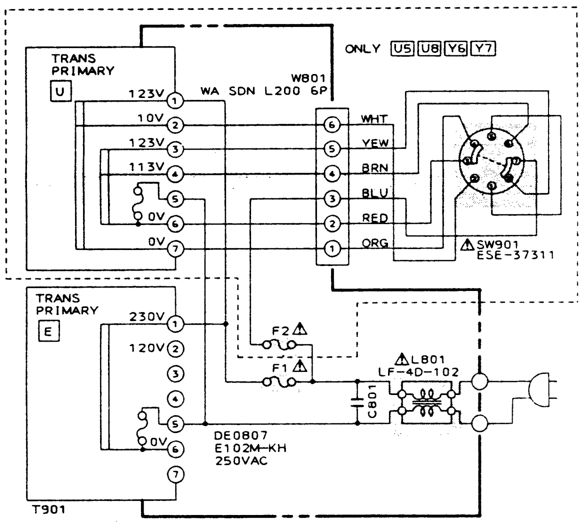

WHT
YEW
BRN
BLU
RED
ORG
W801
C1047-E/C1050-E
C1047-U/C1050-U
P7 P6 P5 P4 P3 P2 P1
ATTENTION:
REMPLACER UNIQUEMENT PAR UN FUSIBLE DE MEME TYPE.
CAUTION:
TO PREVENT FIRE HAZARD,REPLACE ONLY WITH SAME TYPE FUSE.
T2.0A T630 F1
C801
P801
L801
R801
T2.0A T630 F2

MAIN410(B) PCB C1047A501B

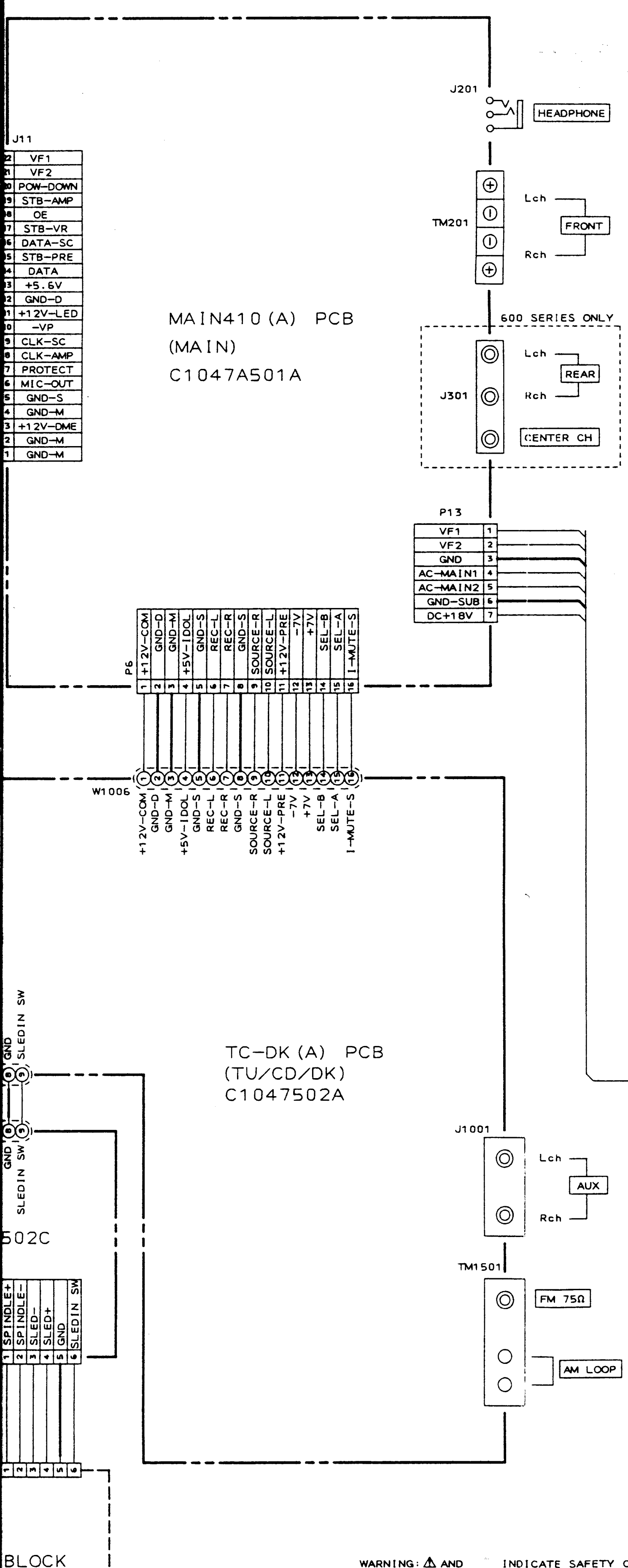
NOTE : PART DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT
PARTS INFORMATION.

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY.
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
RECOMMENDED PARTS

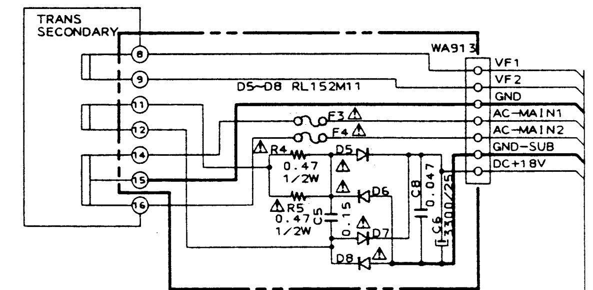
AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.
POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL.
NE REMPLACER QUE DES PIECES RECOMMANDEES PAR LE FABRICANT


ONLY U5 U8 Y6 Y7
TRANS PRIMARY
U
123V
10V
123V
113V
0V
0V
W801
WA SDN L200 6P
WHT
YEW
BRN
BLU
RED
ORG
SW901
ESE-37311
TRANS PRIMARY
E
230V
120V
0V
F2
F1
L801
LF-4D-102
C801
DE0807
E102M-KH
250VAC
T901

MAIN410(B) PCB (PRIMARY)
C1047A501B


J201
HEADPHONE
TM201
Lch
Rch
FRONT
600 SERIES ONLY
J301
Lch
Rch
REAR
CENTER CH
J11
22 VF1
21 VF2
20 POW-DOWN
19 STB-AMP
18 OE
17 STB-VR
16 DATA-SC
15 STB-PRE
14 DATA
13 +5.6V
12 GND-D
11 +12V-LED
10 -VP
9 CLK-SC
8 CLK-AMP
7 PROTECT
6 MIC-OUT
5 GND-S
4 GND-M
3 +12V-DME
2 GND-M
1 GND-M
MAIN410 (A) PCB
(MAIN)
C1047A501A
P13
1 VF1
2 VF2
3 GND
4 AC-MAIN1
5 AC-MAIN2
6 GND-SUB
7 DC+18V
P6
1 +12V-COM
2 GND-D
3 GND-M
4 +5V-IDOL
5 GND-S
6 REC-L
7 REC-R
8 GND-S
9 SOURCE-R
10 SOURCE-L
11 +12V-PRE
12 -7V
13 +7V
14 SEL-B
15 SEL-A
16 I-MUTE-S
W1006
+12V-COM
GND-D
GND-M
+5V-IDOL
GND-S
REC-L
REC-R
GND-S
SOURCE-R
SOURCE-L
+12V-PRE
-7V
+7V
SEL-B
SEL-A
I-MUTE-S
GND
SLEDIN SW
TC-DK (A) PCB
(TU/CD/DK)
C1047502A
GND
SLEDIN SW
502C
1 SPINDLE+
2 SPINDLE-
3 SLED-
4 SLED+
5 GND
6 SLEDIN SW
BLOCK
J1001
Lch
Rch
AUX
TM1501
FM 75Ω
AM LOOP

		F1	F2	F3	F4
410 413R 415K	E1, E3, B1, S1	T630MA	–	T2.5A	T2.5A
	U5, U8, Y6, Y7	T630MA	T630MA	T2.5A	T2.5A
610 613R 615K	E1, E3, B1, S1	T2.0A	–	T5.0A	T5.0A
	U5, U8, Y6, Y7	T2.0A	T2.0A	T5.0A	T5.0A

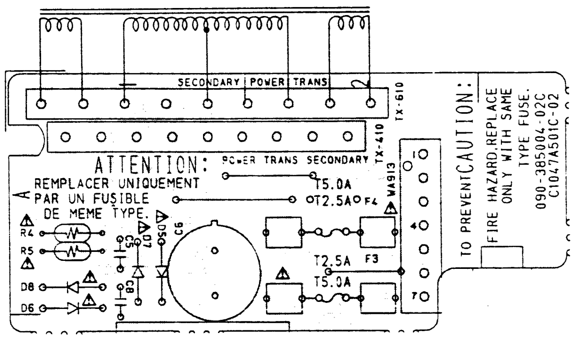

TRANS SECONDARY
WA913
VF1
VF2
GND
AC-MAIN1
AC-MAIN2
GND-SUB
DC+18V
D5~D8 RL152M11
F3
F4
R4
0.47 1/2W
R5
0.47 1/2W
C5 0.15
D5
D6
D7
D8
C8 0.047
C6 3300/25

MAIN410(C) PCB (SECONDARY)
C1047A501C

⚠ POWER TRANSFORMER:

400 SERIES
E1 E3 B1 S1 410 : C1047E
E1 413R : C1047E
U5 U8 Y6 Y7 415K : C1047U

600 SERIES
E1 E3 B1 S1 610 : C1049E
E1 613R : C1049E
U5 U8 Y6 Y7 615K : C1047U


SECONDARY POWER TRANS
ATTENTION:
REMPLACER UNIQUEMENT PAR UN FUSIBLE DE MEME TYPE.
POWER TRANS SECONDARY
T5.0A
T2.5A F4
WA913
TX-410
TX-610
R4
R5
C5
C8
D7
D5
C6
D8
D6
T2.5A F3
T5.0A
CAUTION:
TO PREVENT FIRE HAZARD, REPLACE ONLY WITH SAME TYPE FUSE.
090-395904-02C
C1047A501C-02

MAIN410(C) PCB C1047A501C

WARNING: ⚠ AND INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

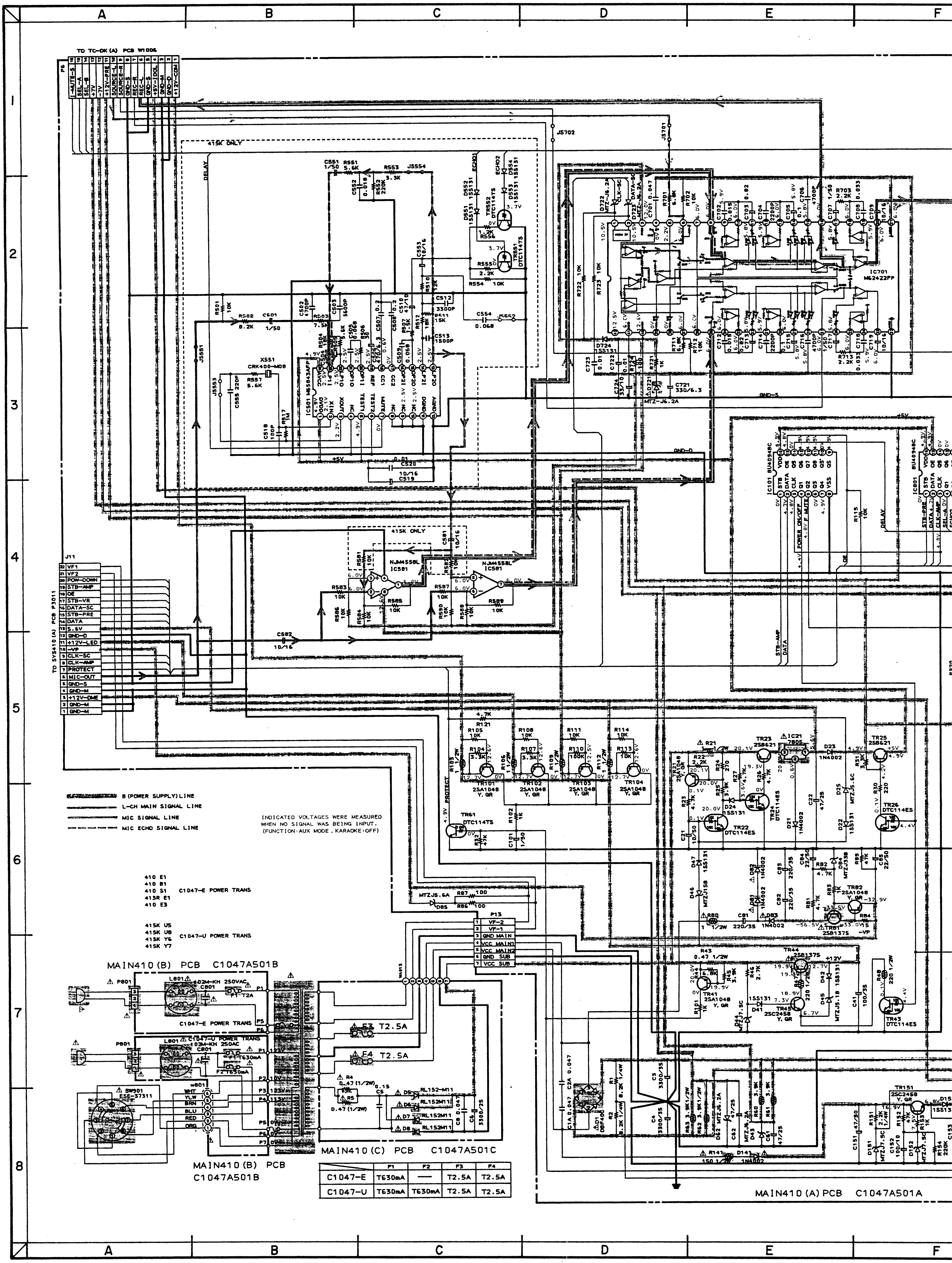
AVERTISSMENT: ⚠ ET , ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL. NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

NOTE : PART DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT
PARTS INFORMATION.

WARNING. ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY.
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
RECOMMENDED PARTS

AVERTISSEMENT. ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SECURITE.
POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL
NE REMPLACER QUE DES PIECES RECOMMANDEES PAR LE FABRICANT

AC-410/413R/415K
AC-610/613R/615K
CONNECTION DIAGRAM
No.6-1 C104701M
A1



A
B
C
D
E
F
1
2
3
4
5
6
7
8
TO TC-DK (A) PCB W1006
P6
-MUTE-S
SEL-A
SEL-B
+7V
-7V
+12V-PRE
SOURCE-L
SOURCE-R
GND-S
REC-R
REC-L
GND-S
+5V-IDOL
GND-M
GND-D
+12V-CDM
415K ONLY
DELAY
JS702
JS701
IC501 M65843AFP
X551 CRK400-M0B
IC581 NJM4558L
IC701 M62422FP
IC101 BU4094BC
IC801 BU4094BC
GND-S
GND-D
+5V
J11
TO SYS410 (A) PCB P3011
VF1
VF2
POW-DOWN
STB-AMP
OE
STB-VR
DATA-SC
STB-PRE
DATA
5.6V
GND-D
+12V-LED
-VP
CLK-SC
CLK-AMP
PROTECT
MIC-OUT
GND-S
GND-M
+12V-DME
GND-M
GND-M
PROTECT
TR101 2SA1048 Y. GR
TR102 2SA1048 Y. GR
TR103 2SA1048 Y. GR
TR104 2SA1048 Y. GR
TR61 DTC114TS
TR23 2SB621
IC21 7805
TR25 2SB621
TR22 DTC114ES
TR24 DTC114ES
TR26 DTC114ES
TR81 2SB1375
TR82 2SA1048
TR44 2SB1375
TR41 2SA1048 Y. GR
TR45 2SC2458 Y. GR
TR43 DTC114ES
TR151 2SC2458 Y. GR
P13
VF-2
VF-1
GND MAIN
VCC MAIN1
VCC MAIN2
GND SUB
VCC SUB
P801
L801
C801
F1 T2A
F2 T630mA
F3 T2.5A
F4 T2.5A
SW901 ESE-37311
WHT
YLW
BRN
BLU
RED
ORG
D5 RL152-M11
D6 RL152M11
D7 RL152M11
D8 RL152M11

B (POWER SUPPLY) LINE
L-CH MAIN SIGNAL LINE
MIC SIGNAL LINE
MIC ECHO SIGNAL LINE

INDICATED VOLTAGES WERE MEASURED
WHEN NO SIGNAL WAS BEING INPUT.
(FUNCTION: AUX MODE . KARAOKE: OFF)

410 E1
410 B1
410 S1 C1047-E POWER TRANS
413R E1
410 E3

415K U5
415K U8
415K Y6 C1047-U POWER TRANS
415K Y7

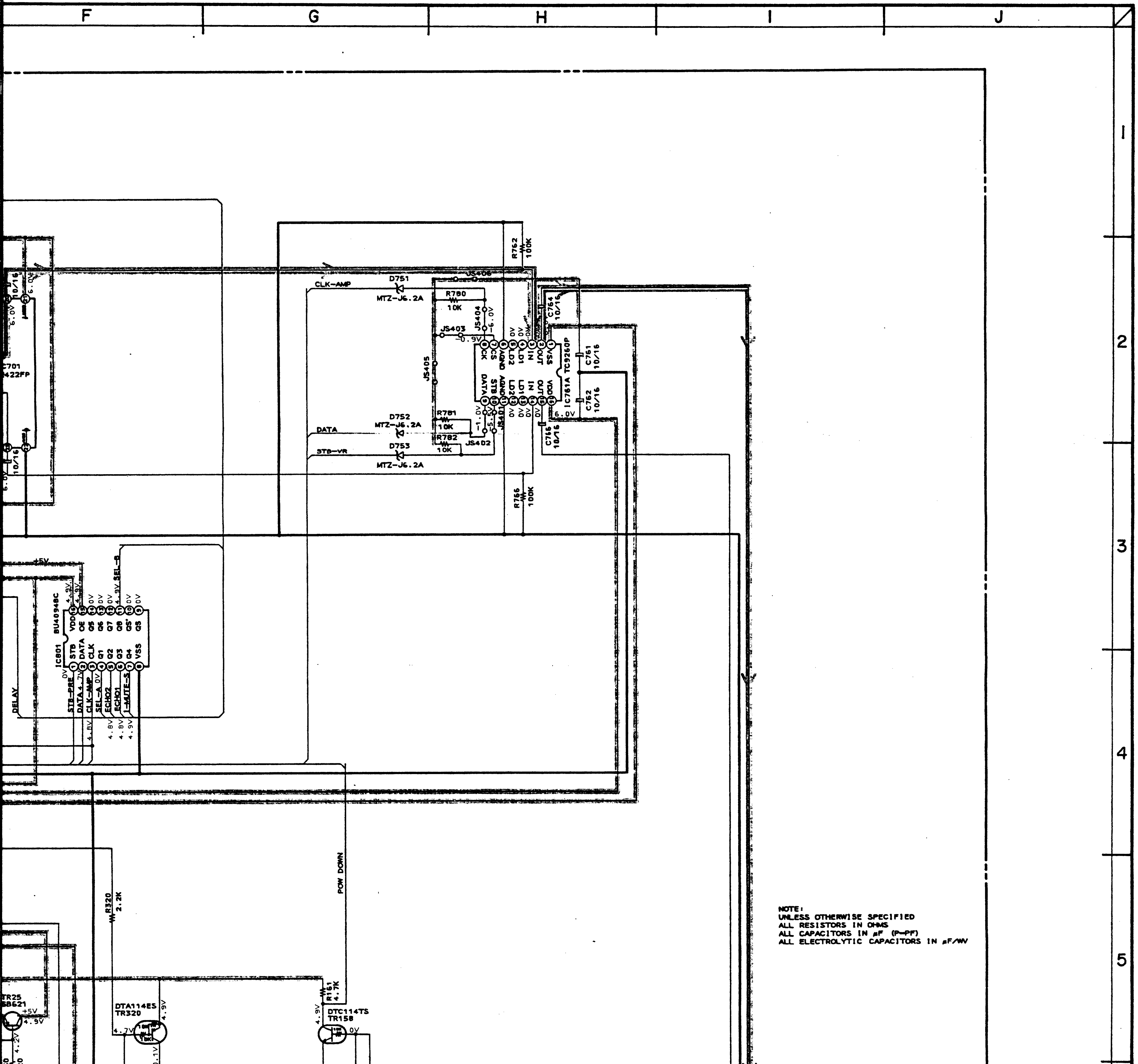
MAIN410 (B) PCB C1047A501B

MAIN410 (C) PCB C1047A501C

MAIN410 (B) PCB
C1047A501B

MAIN410 (A) PCB C1047A501A

	F1	F2	F3	F4
C1047-E	T630mA	—	T2.5A	T2.5A
C1047-U	T630mA	T630mA	T2.5A	T2.5A


F
G
H
I
J
1
2
3
4
5
6
7
8
CLK-AMP
D751
MTZ-J6.2A
R780
10K
JS403
JS404
JS405
JS406
JS401
JS402
D752
MTZ-J6.2A
D753
MTZ-J6.2A
DATA
STB-VR
R781
10K
R782
10K
IC761A
TC9260P
C764
10/16
C761
10/16
C762
10/16
C766
10/16
R762
100K
R766
100K
IC701
IC801
BU4094BC
STB-PRE
DATA
CLK-AMP
SEL-A
ECHO2
ECHO1
L-MUTE-S
SEL-B
DELAY
+5V
R320
2.2K
POW DOWN
DTA114ES
TR320
DTC114TS
TR158
R161
4.7K
R322
47K
R165
47K
TR25
2SB621
TR26
DTC114ES
TR43
DTC114ES
TR134A
2SD1796
TR137A
2SB1257
TR131
DTC114ES
TR130
2SA1048
TR132
2SA1048
TR135
2SC2458
TR151
2SC2458
TR152
2SC2458
TR153
DTA114TS
TR154
2SC2458
TR155
2SC2458
D130
D131
D132
MTZJ22D
D133
D134
MTZJ22D
D135
D142
1SS131
D153
D154
D155
D156
1SS131
D157
1SS131
D3
MTZJ5.6C
D4
MTZJ5.6C
DC.DETECT
C154 100/16
IC201
SI1875I
IC202
SI1875I
TR201
2SC2458
TR251
2SC2458
R201
220K
R202
2.2K
R203
220K
R204
47
R205
27K
R206
330
R208
4.7K
R251
220K
R252
2.2K
R253
220K
R254
47
R255
27K
R256
330
R258
4.7K
C202
10/50
C203
100P
C204
47/25
C205
22P
C206
0.22
C207
0.22
C211
10/50
C213
0.01
C215
10/50
C216
10
C252
10/50
C253
100P
C254
47/25
C255
22P
C256
0.22
C257
0.22
R212
22K 1/4W
R262
22K 1/4W
R213
4.7 1W
R263
4.7 1W
3.9K R209
3.9K R210
3.9K R211
3.9K R259
3.9K R260
3.9K R261
C212
0.01
C262
0.01
J201A
HSJ2000-01-010
HEADPHONE
OPW/S-8-14-5H2
L202
JS1
JS2
JS3
JS4
C208
0.022
C258
0.022
TM201
CJ-9007-060 4P
Lch
Rch
FRONT
047A501A

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF (P—PF)
ALL ELECTROLYTIC CAPACITORS IN μF/WV

L202,
C208/C212/C258/C262/C213:
410 (E1) / (B1) / (S1) / (E3)
/413R (E1) ONLY

JS1 TO JS4 : 415K
(U5, U8, Y6, Y7) ONLY

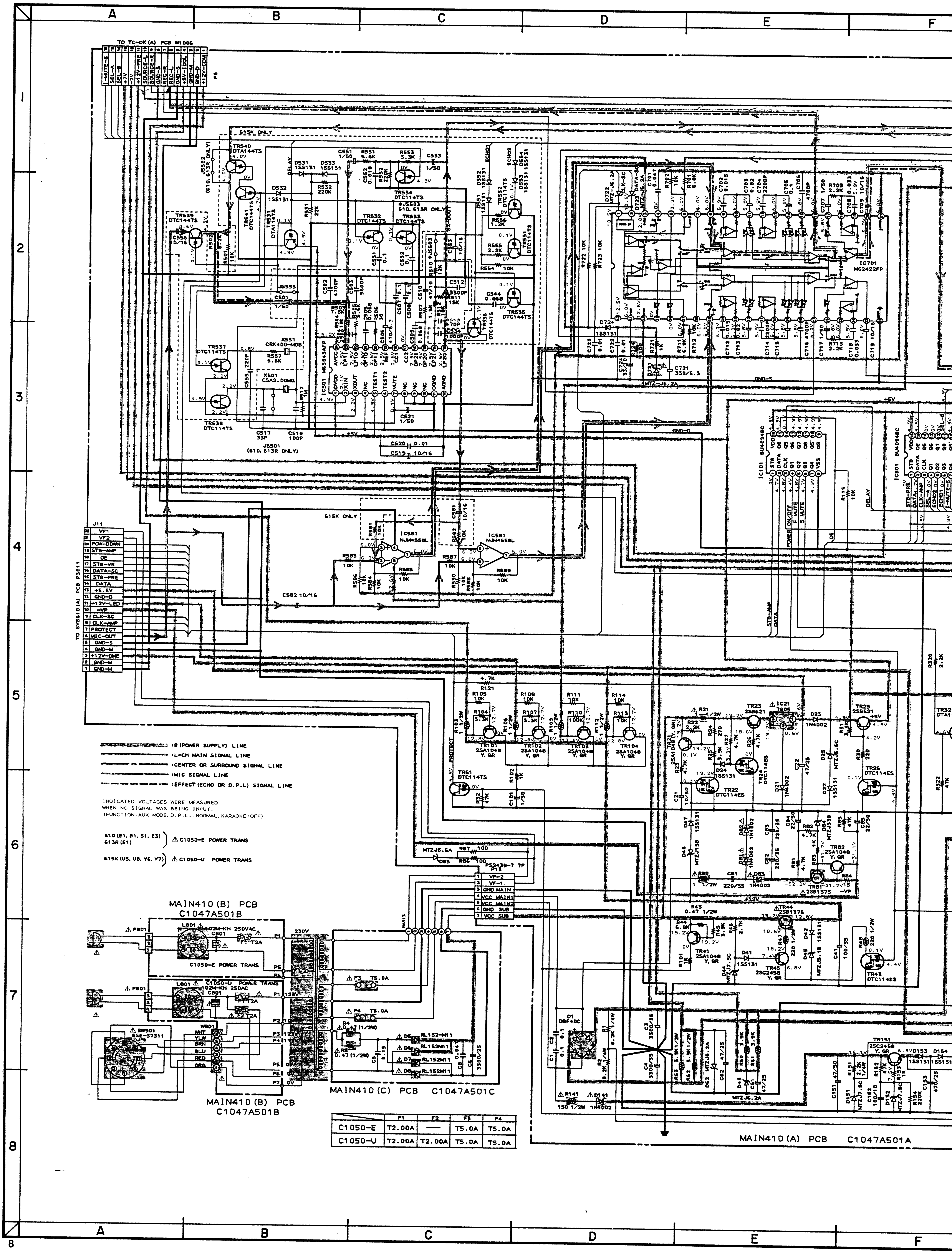
WARNING: ⚠ AND ▨ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSMENT: ⚠ ET ▨, ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ, POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

AC-410/413R/415K
MAIN (400 SERIES)
SCHEMATIC DIAGRAM

No.6-2 C104702M

A0


A
B
C
D
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F
1
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3
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5
6
7
8
TO TC-DK (A) PCB W1006
P6
16 I-MUTE-S
15 SEL-A
14 SEL-B
13 +7V
12 -7V
11 +12V-PRE
10 SOURCE-L
9 SOURCE-R
8 GND-S
7 REC-R
6 REC-L
5 GND-S
4 +5V-IDOL
3 GND-M
2 GND-D
1 +12V-COM
615K ONLY
IC501 M65843AFP
X501 CSA2.00MG
X551 CRK400-M0B
JS501 (610, 613R ONLY)
JS502 (610, 613R ONLY)
JS503 610, 613R ONLY
TO SYS610 (A) PCB P3011
J11
22 VF1
21 VF2
20 POW-DOWN
19 STB-AMP
18 OE
17 STB-VR
16 DATA-SC
15 STB-PRE
14 DATA
13 +5.6V
12 GND-D
11 +12V-LED
10 -VP
9 CLK-SC
8 CLK-AMP
7 PROTECT
6 MIC-OUT
5 GND-S
4 GND-M
3 +12V-DME
2 GND-M
1 GND-M
IC581 NJM4558L
IC701 M62422FP
IC101 BU4094BC
IC801 BU4094BC
IC21 7805
GND-S
GND-D
+5V
+12V
DELAY
P13 PS2430-7 7P
1 VF-2
2 VF-1
3 GND MAIN
4 VCC MAIN1
5 VCC MAIN2
6 GND SUB
7 VCC SUB
MAIN410 (B) PCB
C1047A501B
C1050-E POWER TRANS
C1050-U POWER TRANS
SW801 ESE-37311
W801
WHT
YLW
BRN
BLU
RED
ORG
230V
MAIN410 (C) PCB C1047A501C
MAIN410 (A) PCB C1047A501A

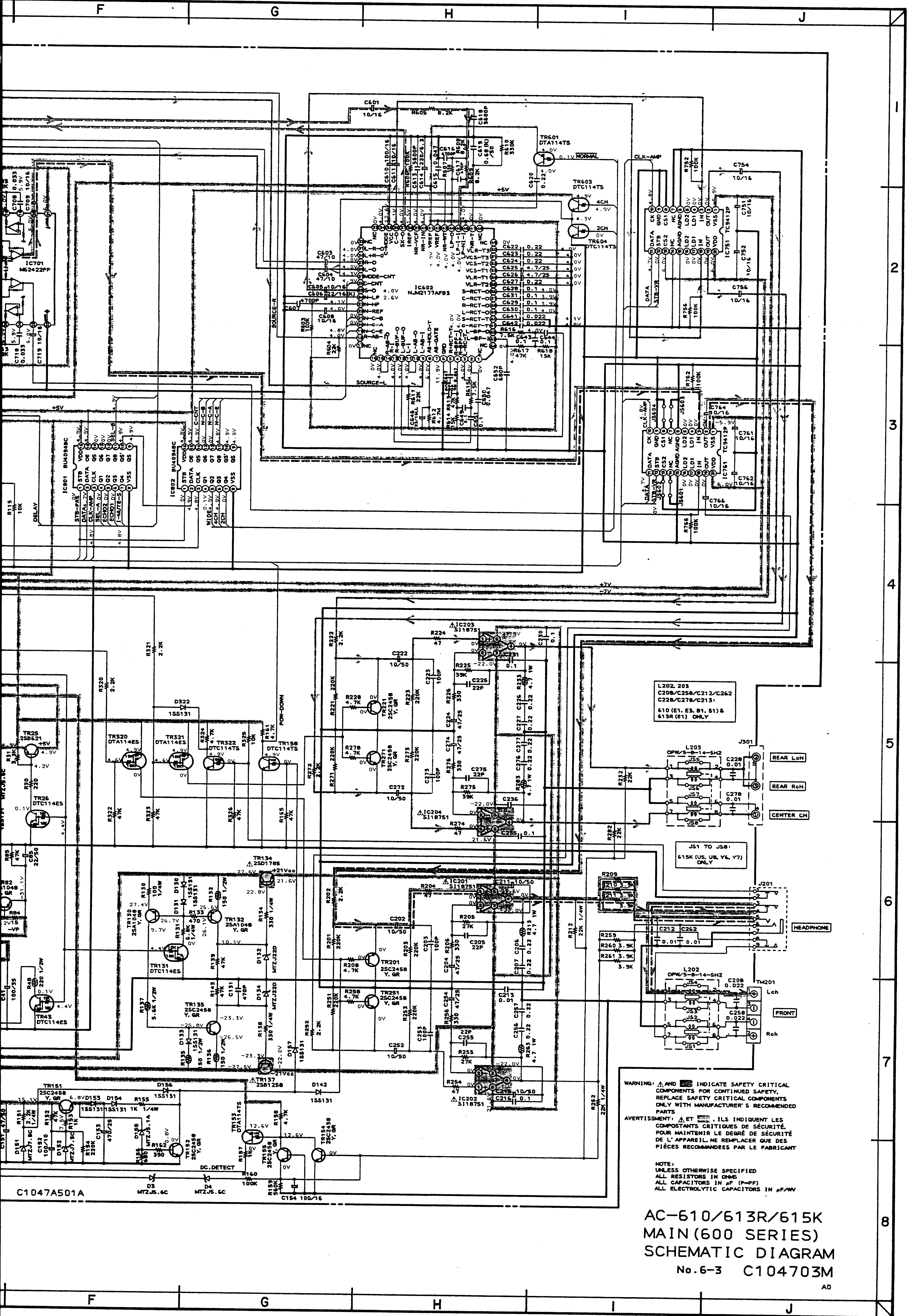
:B (POWER SUPPLY) LINE
:L-CH MAIN SIGNAL LINE
:CENTER OR SURROUND SIGNAL LINE
:MIC SIGNAL LINE
:EFFECT (ECHO OR D.P.L) SIGNAL LINE

INDICATED VOLTAGES WERE MEASURED
WHEN NO SIGNAL WAS BEING INPUT.
(FUNCTION: AUX MODE, D.P.L.: NORMAL, KARAOKE: OFF)

610 (E1, B1, S1, E3)
613R (E1) ⚠ C1050-E POWER TRANS

615K (US, U8, Y6, Y7) ⚠ C1050-U POWER TRANS

	F1	F2	F3	F4
C1050-E	T2.00A	—	T5.0A	T5.0A
C1050-U	T2.00A	T2.00A	T5.0A	T5.0A


F
G
H
I
J
1
2
3
4
5
6
7
8
IC701 M62422FP
IC602 NJM2177AFB3
SOURCE-R
SOURCE-L
TR601 DTA114TS
NORMAL
TR603 DTC114TS
TR604 DTC114TS
4CH
2CH
CLK-AMP
IC751 TC9412P
IC761 TC9412P
IC801 BU4094BC
IC802 BU4094BC
DELAY
+5V
+7V
-7V
POW-DOWN
TR320 DTA114ES
TR321 DTA114ES
TR322 DTC114TS
TR158 DTC114TS
TR25 2SB621
TR26 DTC114ES
TR43 DTC114ES
D322 1SS131
⚠IC203 S118751
⚠IC204 S118751
⚠IC201 S118751
⚠IC202 S118751
TR221 2SC2458 Y, GR
TR271 2SC2458 Y, GR
TR201 2SC2458 Y, GR
TR251 2SC2458 Y, GR
L202, 203
C208/C258/C212/C262
C228/C278/C213:
610 (E1, E3, B1, S1) &
613R (E1) ONLY
L203 OPW/5-8-14-5H2
J301
REAR LcH
REAR RcH
CENTER CH
JS1 TO JS8:
615K (U5, U8, Y6, Y7) ONLY
R209
J201
HEADPHONE
L202 OPW/5-8-14-5H2
TM201
Lch
Rch
FRONT
TR134 ⚠2SD1785
+21Vcc
TR130 2SA1048 Y, GR
TR131 DTC114ES
TR132 2SA1048 Y, GR
TR135 2SC2458 Y, GR
TR137 ⚠2SB1258
-21Vcc
TR151 2SC2458 Y, GR
TR152 2SC2458 Y, GR
TR153 DTA114TS
TR155 2SC2458 Y, GR
TR154 2SC2458 Y, GR
DC.DETECT
D3 MTZJ5.6C
D4 MTZJ5.6C
C1047A501A

WARNING: ⚠ AND ▨ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSMENT: ⚠ ET ▨ . ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

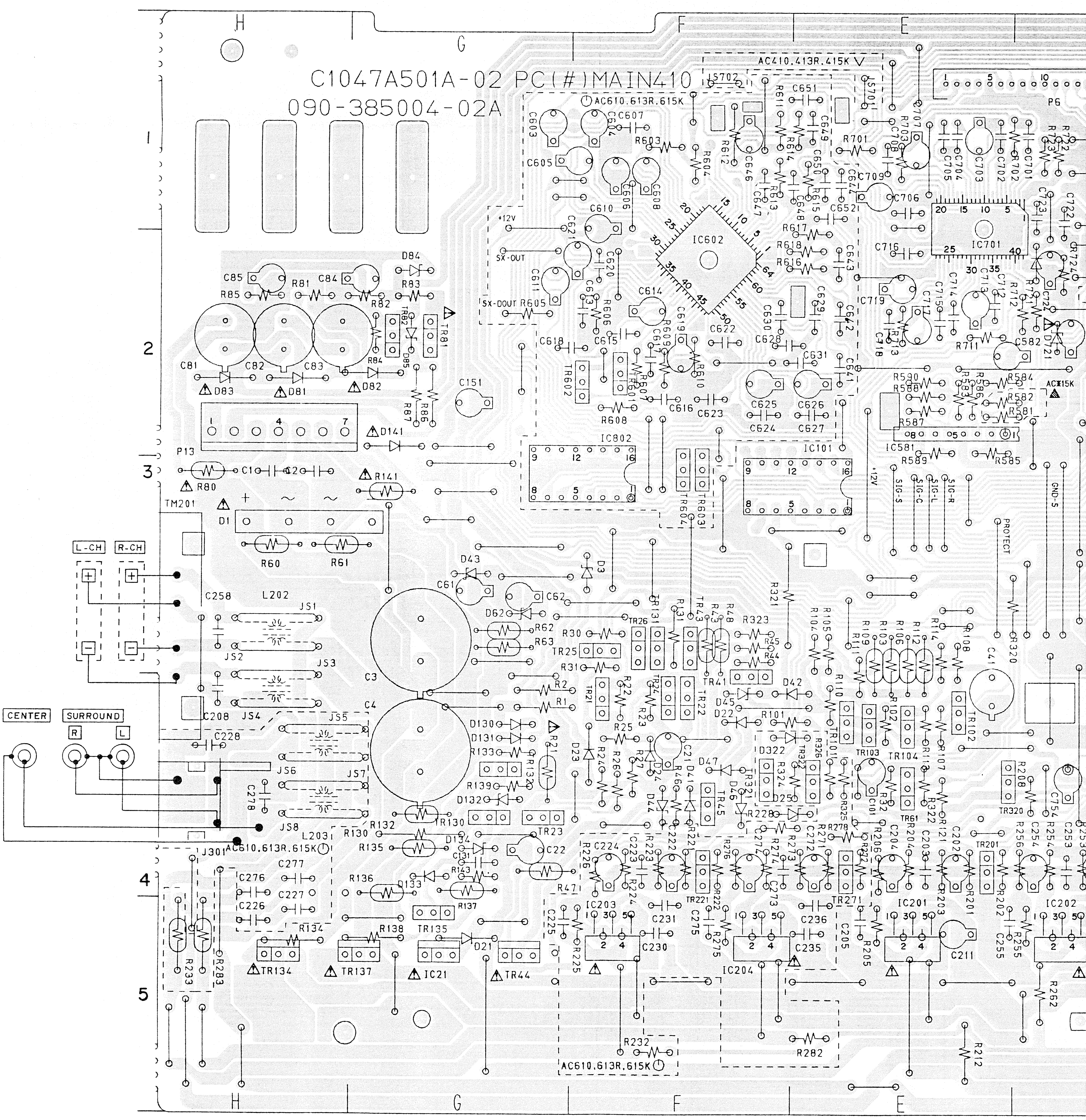
NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF (P—PF)
ALL ELECTROLYTIC CAPACITORS IN μF/WV

AC–610/613R/615K
MAIN (600 SERIES)
SCHEMATIC DIAGRAM
No.6–3 C104703M

A0

PRINCIPAL PARTS LOCATION

ICs		TRANSISTORs										CONNECTORs	
IC21	G5	TR21	F4	TR102	E4	TR158	C5	TR537	B1			J11	B1
IC101	E,F3	TR22	F4	TR103	E4	TR201	E4	TR538	C1			J201	B3
IC201	E5	TR23	G4	TR104	E4	TR221	F4	TR539	B1			J301	H4
IC202	D5	TR24	F4	TR130	G4	TR251	D4	TR540	B1			P6	D,E
IC203	F5	TR25	F3	TR131	F3	TR271	E4	TR541	B1			P13	H2
IC204	F5	TR26	F3	TR132	G4	TR320	D,E4	TR551	C2				
IC501	C1	TR41	F3,4	TR134	H5	TR321	F4	TR552	C1,2				
IC581	E2	TR43	F3	TR135	G5	TR322	E4	TR601	F2				
IC602	F2	TR44	G5	TR137	G5	TR531	C1	TR603	F3				
IC701	E1,2	TR45	F4	TR151	C4	TR532	D1	TR604	F3				
IC751	D3,4	TR61	E4	TR152	C5	TR533	D1						
IC761	C3,4	TR81	G2	TR153	C,D4	TR534	C2						
IC801	D2	TR82	G2	TR154	D5	TR535	D1,2						
IC802	F,G3	TR101	E4	TR155	D5	TR536	C2						


C1047A501A-02 PC(#)MAIN410
090-385004-02A
H
G
F
E
1
2
3
4
5
AC410.413R.415K
AC610.613R.615K
IC602
IC701
IC802
IC101
IC581
IC203
IC204
IC201
IC202
IC21
P6
P13
TM201
J301
L-CH
R-CH
CENTER
SURROUND
R
L
+12V
SX-OUT
SX-DOUT
PROTECT
SIG-S
SIG-C
SIG-L
SIG-R
GND-S
TR134
TR137
TR44

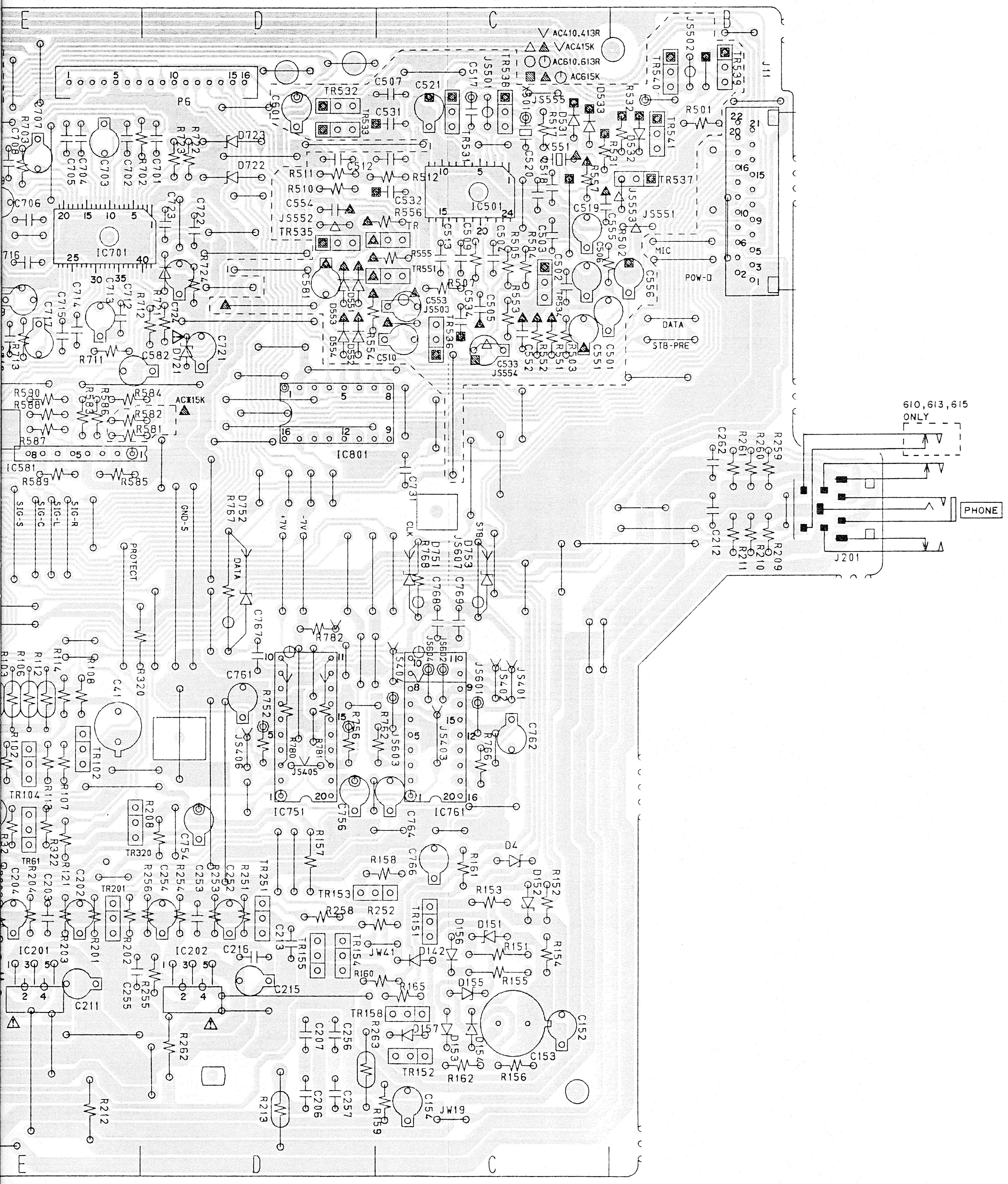
MAIN410(A) PCB C1047A501A

NOTE

.... B1
.... C1
.... B1
.... B1
.... B1
.... C2
.... C1,2
.... F2
.... F3
.... F3

CONNECTORs

J11	B1
J201	B3
J301	H4
P6	D,E1
P13	H2



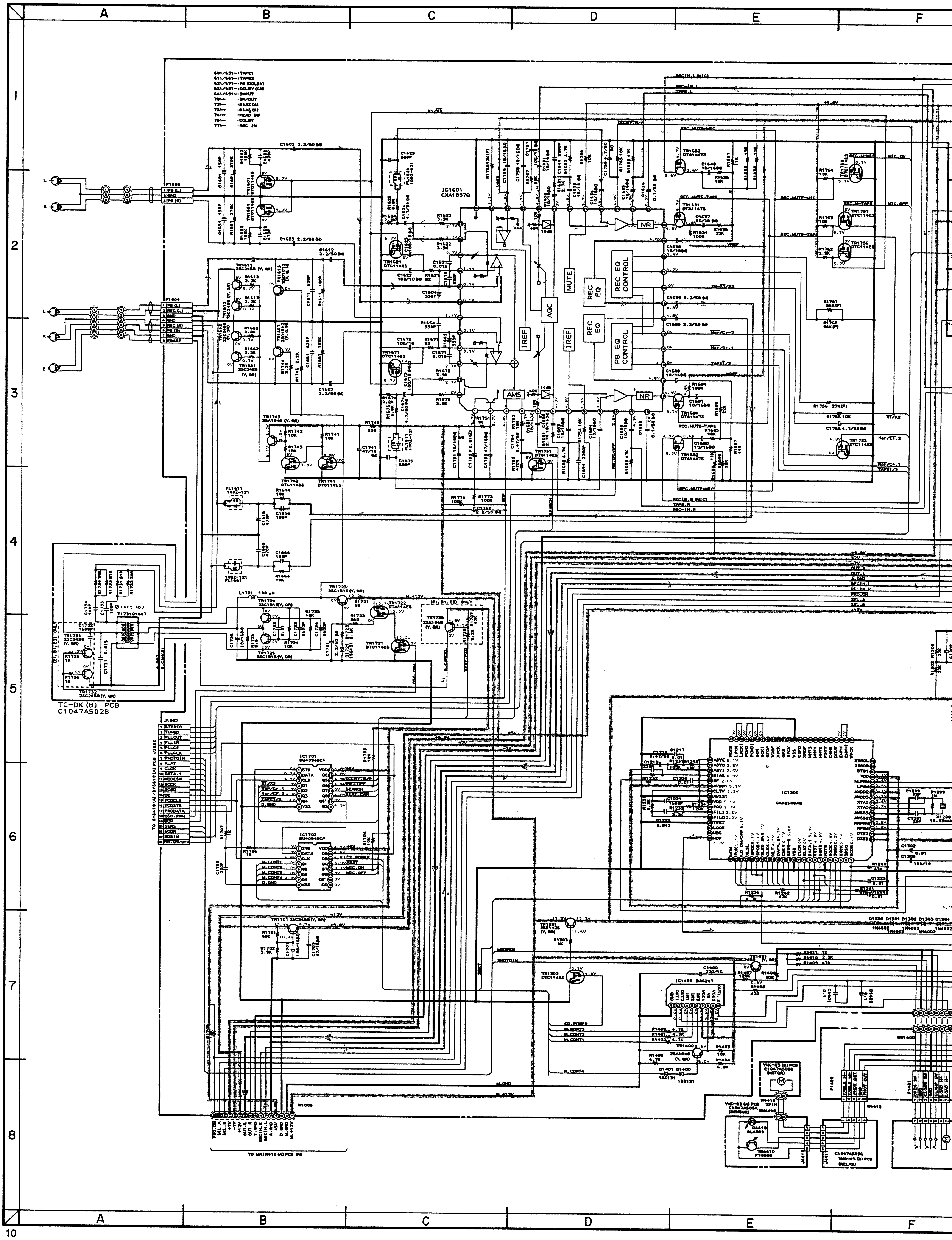
E
D
C
B
V AC410.413R
V AC415K
AC610.613R
AC615K
P6
J11
IC701
IC501
IC801
IC581
IC751
IC761
IC201
IC202
J201
PHONE
610,613,615 ONLY
MIC
POW-D
DATA
STB-PRE
SIG-S
SIG-C
SIG-L
SIG-R
GND-S
PROTECT
+7V
-7V
CLK
STB
ACX15K
TR532
TR535
TR537
TR539
TR540
TR541
TR551
TR102
TR104
TR151
TR152
TR153
TR154
TR155
TR158
TR201
TR251
TR320
C152
C211
C215
JW19
JW41
D4

IA

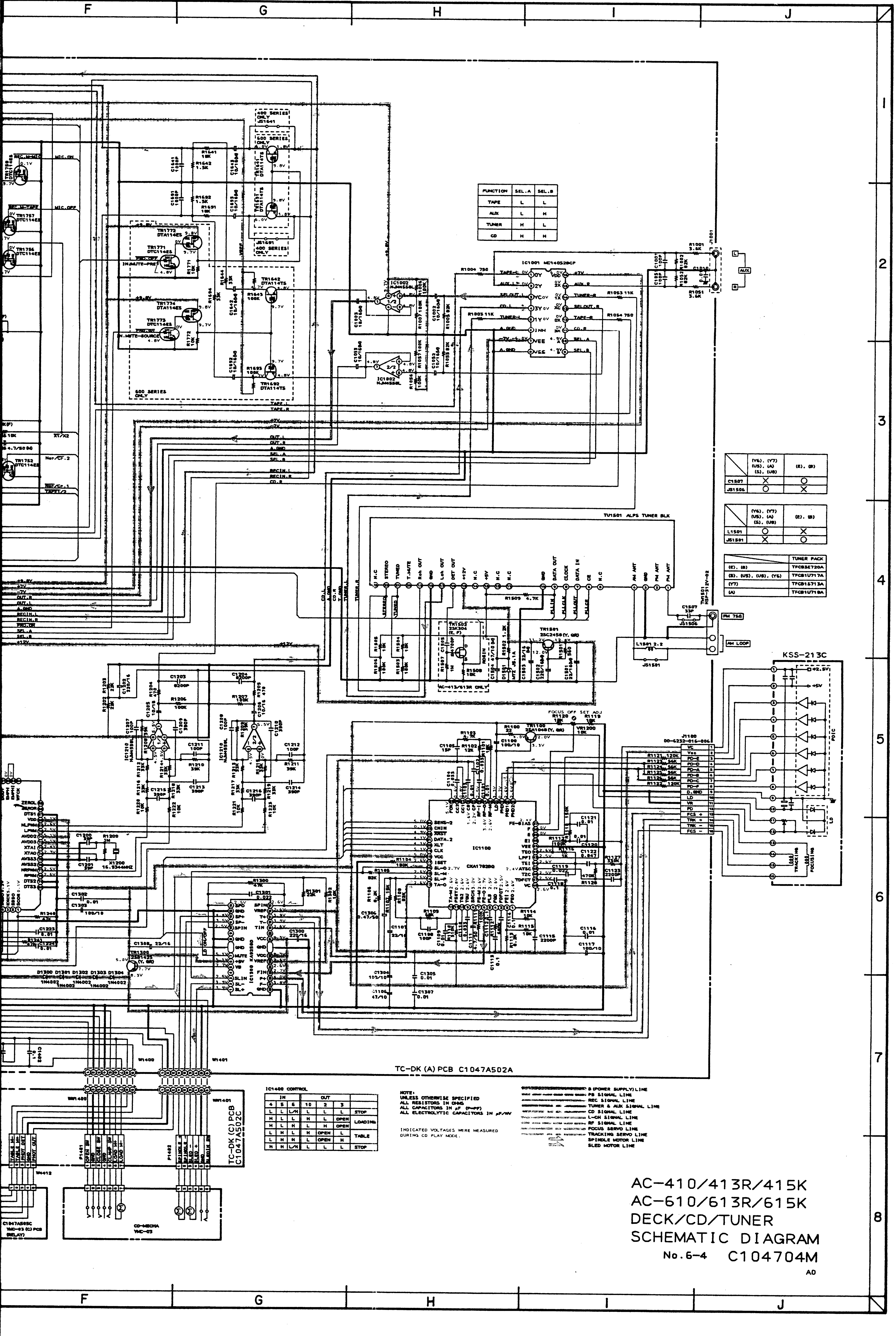
NOTE : PART DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY.
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL,
NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT



A
B
C
D
E
F
1
2
3
4
5
6
7
8
601/651~:TAPE1
611/661~:TAPE2
621/671~:PB (DOLBY)
631/681~:DOLBY (CH)
641/691~:INPUT
701~ :IN/OUT
721~ :BIAS (A)
731~ :BIAS (B)
741~ :HEAD SW
751~ :DOLBY
771~ :REC IN
P1005
P1004
IC1601
CXA1897Q
MUTE
AGC
IREF
REC EQ
REC EQ CONTROL
PB EQ CONTROL
AMS
NR
TR1611 2SC2458 (Y, GR)
TR1601 DTC114ES
TR1651 DTC114ES
TR1621 DTC114ES
TR1671 DTC114ES
TR1632 DTA144TS
TR1631 DTA114TS
TR1681 DTA114TS
TR1682 DTA144TS
TR1743 2SA1048 (Y, GR)
TR1742 DTC114ES
TR1741 DTC114ES
TR1751 DTC114ES
TR1757 DTC114ES
TR1756 DTC114ES
TR1752 DTC114ES
TR1758 DTC114ES
TR1723 2SC1815 (Y, GR)
TR1724 2SC1815 (Y, GR)
TR1725 2SC1815 (Y, GR)
TR1722 DTA114ES
TR1721 DTC114ES
TR1726 2SA1048 (Y, GR)
(E1, B1, E3) ONLY
TR1731 2SC2458 (Y, GR)
TR1732 2SC2458 (Y, GR)
T1731C1847
FREQ ADJ
L1721 100 μH
FL1611 1002-121
FL1661 1002-121
FL1621 1002-121
FL1671 1002-121
TC-DK (B) PCB
C1047A502B
J1002
STEREO
TUNED
PLLOUT
PLLIN
PLLCE
PLLCLK
PHOTOIN
XLAT
CLK
DATA.1
MODESW
SQCK
SQSO
OE
TCDCLK
TCDSTB
PRODATA
OSC.PWM
RFW
SENS
SCOR
RDSIN
MR.ON/OFF
TO SY3410 (A)/SY3510 (A) PCB J5022
IC1701 BU4094BCF
IC1702 BU4094BCF
M.CONT1
M.CONT2
M.CONT3
M.CONT4
D.GND
CD.POWER
MIC.ON
MIC.OFF
SEARCH
TR1701 2SC2458 (Y, GR)
TR1301 2SB1425 (Y, GR)
TR1302 DTC114ES
IC1200 CXD2508AQ
IC1400 BA6247
TR1401 2SC2458 (Y, GR)
TR1400 2SA1048 (Y, GR)
D1401 1SS131
D1400 1SS131
D1300 D1301 D1302 D1303 D1304
1N4002
YMC-03 (B) PCB C1047A505B (MOTOR)
YMC-03 (A) PCB C1047A505A (SENSOR)
D4410 GL4800
TR4410 PT4800
C1047A505C YMC-03 (C) PCB (RELAY)
W1006
TO MAIN410 (A) PCB P6
W1400
W4412
P1400
P1401
J1400
REC.MUTE-MIC
REC.MUTE-TAPE
REC.IN.L
REC.IN.R
TAPE.L
TAPE.R
X1/X2
+5.8V
+12V
-7V
45V
M.GND
M.+12V
MODESW
PHOTOIN


F
G
H
I
J
1
2
3
4
5
6
7
8
IC1001 MC14052BCP
IC1002 NJM4558L
TU1501 ALPS TUNER BLK
TR1501 2SC2458(Y, GR)
TR1502 2SK304 (E, F)
AC-413/613R ONLY
IC1100 CXA1782BQ
IC1300 KA9258D
TR1100 2SA1048(Y, GR)
FOCUS OFF SET ADJ
VR1200 10K
J1100 00-6232-016-806
KSS-213C
PDIC
LD
TRACKING
FOCUSING
FM 75Ω
AM LOOP
AUX
TM1501 HSP-312V-02
600 SERIES ONLY
400 SERIES ONLY
X1200 16.9344MHZ
TC-DK (A) PCB C1047A502A
TC-DK (C) PCB C1047A502C
CD-MECHA YMC-03
W1400
W1401
W1412
P1401
P1402

FUNCTION	SEL.A	SEL.B
TAPE	L	L
AUX	L	H
TUNER	H	L
CD	H	H

	(Y6), (Y7) (U5), (A) (S), (U8)	(E), (B)
C1507	╳	○
JS1506	○	╳

	(Y6), (Y7) (U5), (A) (S), (U8)	(E), (B)
L1501	○	╳
JS1501	╳	○

	TUNER PACK
(E), (B)	TFCB3E720A
(S), (U5), (U8), (Y6)	TFCB1U717A
(Y7)	TFCB15713A
(A)	TFCB1U718A

IC1400 CONTROL

IN			OUT			
4	5	6	10	2	3	
L	L	L/H	L	L	L	STOP
H	L	L	H	L	OPEN	LOADING
H	L	H	L	H	OPEN	
L	H	L	H	OPEN	L	TABLE
L	H	H	L	OPEN	H	
H	H	L/H	L	L	L	STOP

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN μF/WV

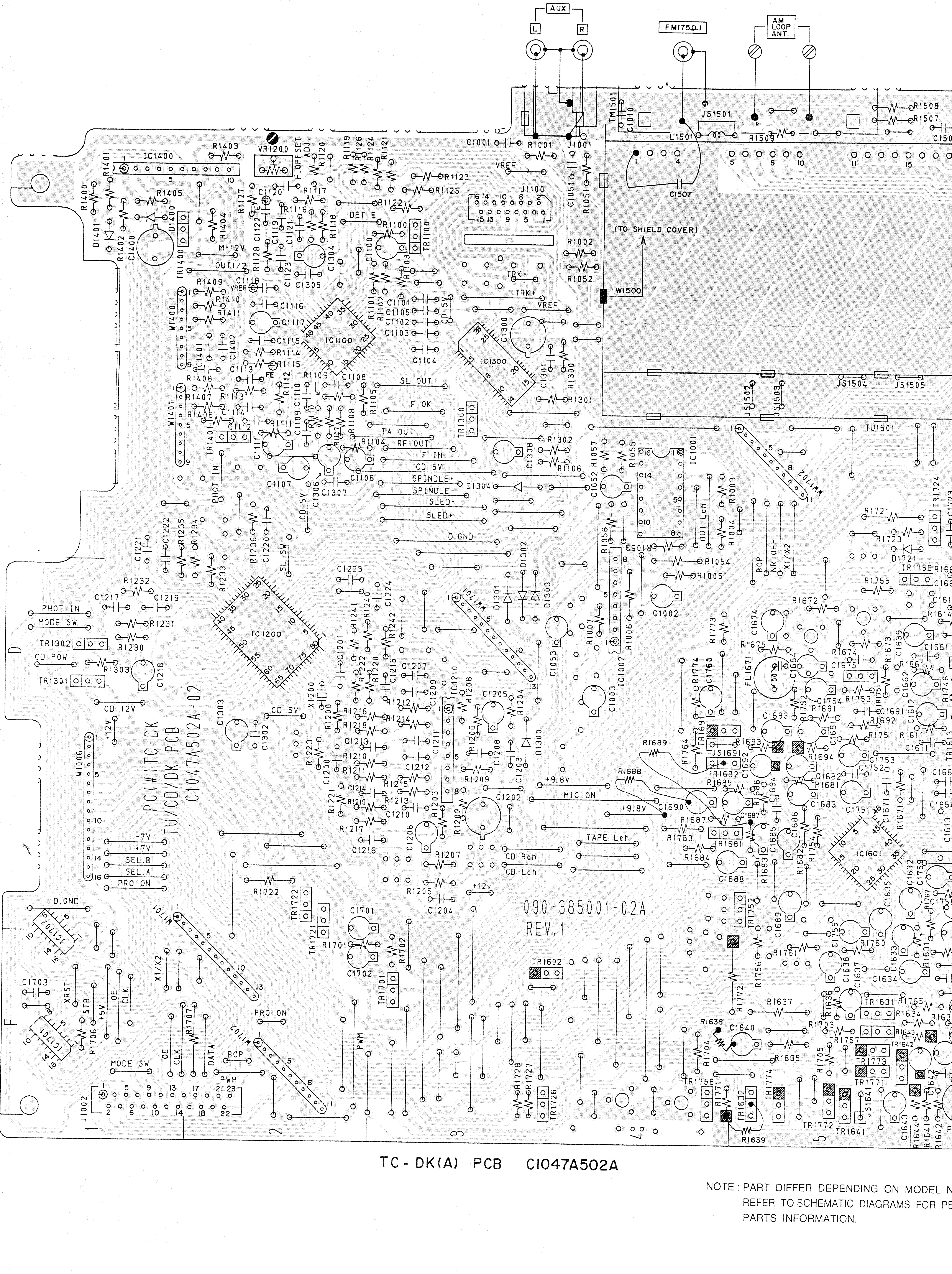
INDICATED VOLTAGES WERE MEASURED
DURING CD PLAY MODE.

B (POWER SUPPLY) LINE
PB SIGNAL LINE
REC SIGNAL LINE
TUNER & AUX SIGNAL LINE
CD SIGNAL LINE
L-CH SIGNAL LINE
RF SIGNAL LINE
FOCUS SERVO LINE
TRACKING SERVO LINE
SPINDLE MOTOR LINE
SLED MOTOR LINE

AC-410/413R/415K
AC-610/613R/615K
DECK/CD/TUNER
SCHEMATIC DIAGRAM

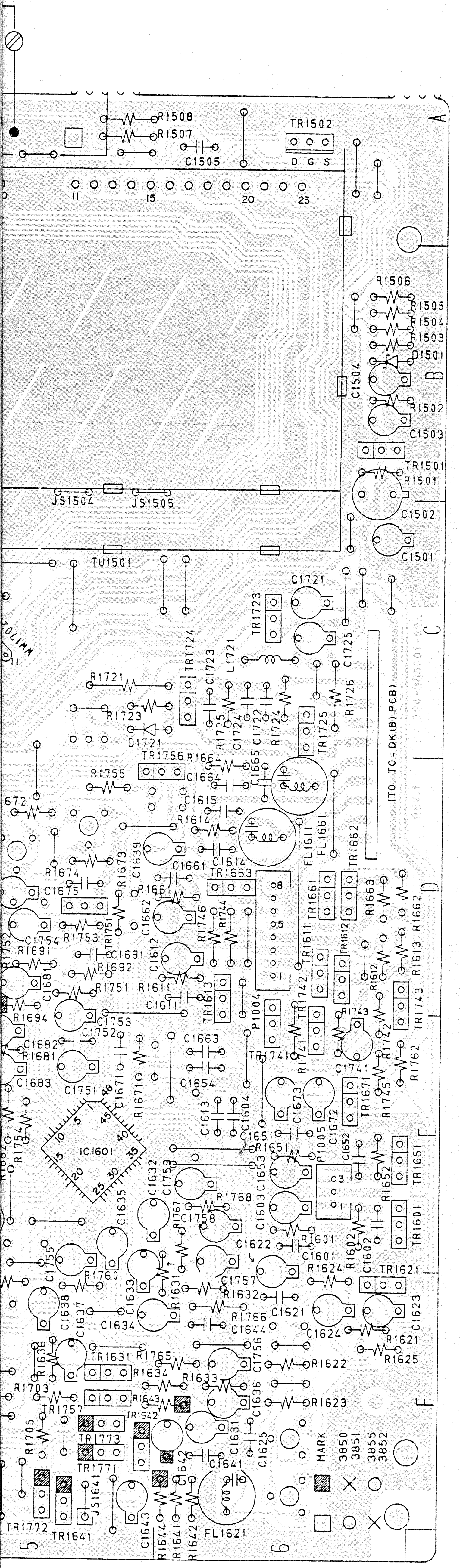
No.6-4 C104704M

A0


AUX
L
R
FM(75Ω)
AM LOOP ANT.
(TO SHIELD COVER)
W1500
TU1501
JS1501
JS1502
JS1503
JS1504
JS1505
IC1400
VR1200
F.OFF SET ADJ.
J1100
J1001
IC1100
IC1300
IC1200
IC1001
IC1002
IC1210
IC1601
IC1701
IC1702
FL1671
W1400
W1401
W1006
W1100
W1701
W1702
J1002
DET E
TRK-
TRK+
VREF
M+12V
OUT1/2
SL OUT
F OK
TA OUT
RF OUT
F IN
CD 5V
SPINDLE+
SPINDLE-
SLED-
SLED+
D.GND
PHOT IN
MODE SW
CD POW
CD 12V
+12V
SL SW
OUT Lch
BOP
NR OFF
X1/X2
+9.8V
MIC ON
TAPE Lch
CD Rch
CD Lch
-7V
+7V
SEL.B
SEL.A
PRO ON
XRST
STB
+5V
OE
CLK
DATA
PWM
PC(#)TC-DK TU/CD/DK PCB C1047A502-02
090-385001-02A REV.1
D
F
1
2
3
4
5

TC-DK(A) PCB C1047A502A

NOTE : PART DIFFER DEPENDING ON MODEL N
REFER TO SCHEMATIC DIAGRAMS FOR PE
PARTS INFORMATION.


A
B
C
D
E
F
5
6
R1508
R1507
TR1502
C1505
D G S
11
15
20
23
R1506
R1505
R1504
R1503
D1501
C1504
R1502
C1503
TR1501
R1501
C1502
C1501
JS1504
JS1505
TU1501
C1721
TR1723
TR1724
C1723
L1721
C1725
R1721
R1723
D1721
R1725
C1724
C1722
R1724
R1726
TR1725
TR1756
R1666
C1665
C1664
R1755
(TO TC-DK(B) PCB)
REV.1
672
C1615
R1614
C1614
C1661
TR1663
FL1611
FL1661
TR1662
R1674
C1675
R1673
C1639
R1661
C1662
R1746
R1744
C1754
R1753
TR1751
C1691
R1691
R1692
C1612
R1751
R1611
C1611
TR1613
P1004
TR1661
TR1611
TR1612
TR1742
R1663
R1612
R1662
R1613
TR1743
R1743
R1694
C1753
C1752
C1682
R1681
C1663
C1654
TR1741
R1741
C1741
R1742
TR1671
R1745
R1762
C1683
C1751
R1671
R1754
IC1601
C1613
C1604
C1673
C1672
C1652
P1005
C1651
R1651
C1653
C1603
TR1651
C1632
C1759
R1768
C1758
R1767
C1635
R1652
TR1601
R1601
C1601
C1602
R1602
C1622
C1755
R1760
C1633
R1631
C1757
R1632
R1624
TR1621
C1638
C1637
C1634
R1766
C1621
C1644
C1624
C1623
R1621
R1625
R1636
TR1631
R1765
R1634
R1633
C1756
R1622
C1636
R1703
R1757
TR1642
R1643
R1623
R1705
TR1773
C1631
C1625
MARK
3850
3851
3855
3852
TR1771
R1642
C1641
JS1641
TR1772
TR1641
C1643
R1644
R1641
R1642
FL1621

ER DEPENDING ON MODEL NUMBER.
SCHEMATIC DIAGRAMS FOR PERTINENT
ORMATION.

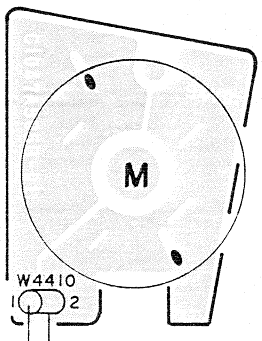
PRINCIPAL PARTS LOCATION

ICs	
IC1001	C4
IC1002	C,D4
IC1100	B2
IC1200	D2
IC1210	D,E3
IC1300	B,C3
IC1400	A1,2
IC1601	E5
IC1701	F1
IC1702	F1

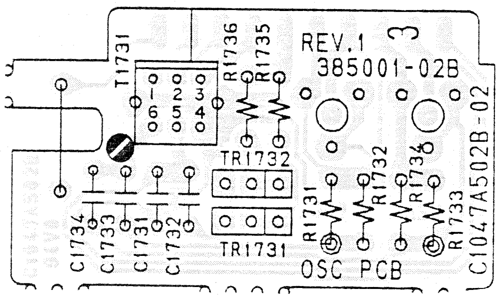
TRANSISTORs	
TR1100	B3
TR1300	C3
TR1301	D1
TR1302	D1
TR1400	B1
TR1401	C2
TR1501	B6
TR1502	A6
TR1601	E6
TR1611	D6
TR1612	D6
TR1613	D6
TR1621	F6
TR1631	F5
TR1632	F5
TR1641	F5
TR1651	E6
TR1661	D6
TR1662	D6
TR1663	D6
TR1671	E6
TR1681	E4
TR1682	E4
TR1691	D4
TR1692	F3,4
TR1701	F3
TR1721	E,F2
TR1722	E2
TR1723	C6
TR1724	C6
TR1725	C6
TR1726	F3
TR1741	D6
TR1742	D6
TR1743	D6
TR1751	D5
TR1752	E5
TR1756	D5,6
TR1757	F5
TR1758	F4
TR1771	F5
TR1772	F5
TR1773	F5
TR1774	F5

CONNECTORs	
J1002	F1,2
J1100	B3
P1004	D6
P1005	E6

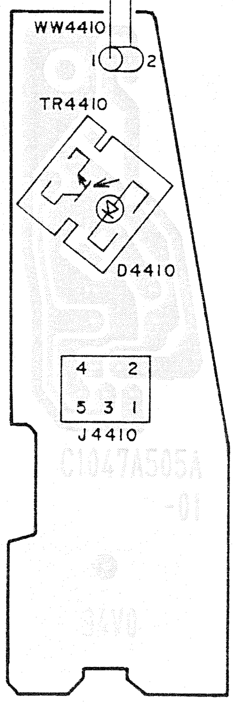
WIREs	
W1006	E1
W1400	B1
W1401	C1



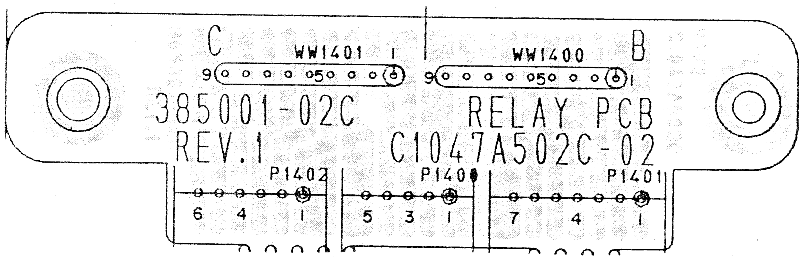
YMC03(B) PCB
C1047A505B


REV.1
385001-02B
T1731
R1736
R1735
TR1732
TR1731
R1731
R1732
R1734
R1733
C1734
C1733
C1731
C1732
OSC PCB
C1047A502B-02

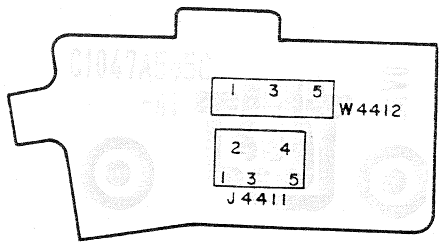
TC-DK(B) PCB C1047A502B


WW4410
1
2
TR4410
D4410
4 2
5 3 1
J4410
C1047A505A
-01

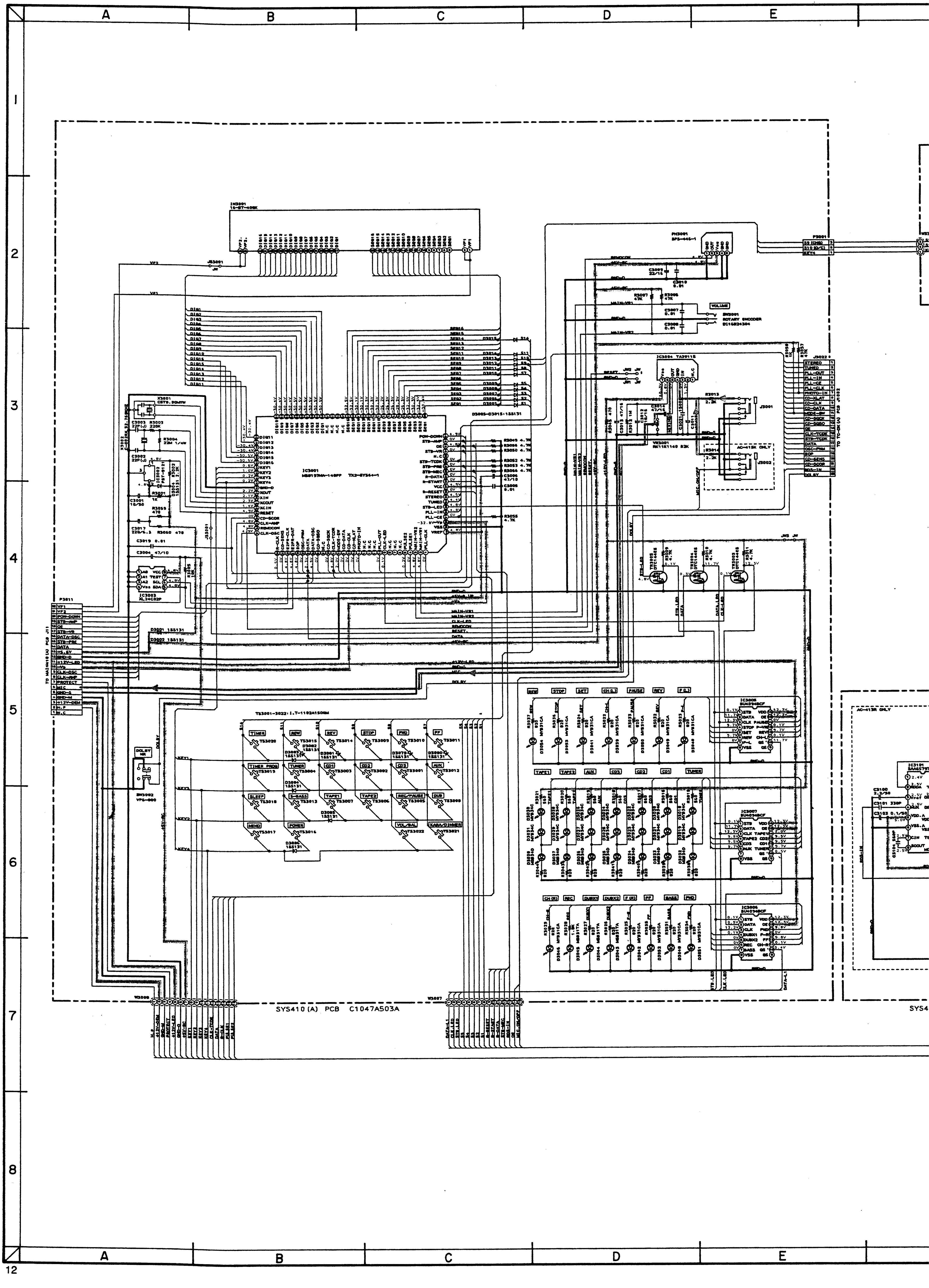
YMC03(A) PCB
C1047A505A

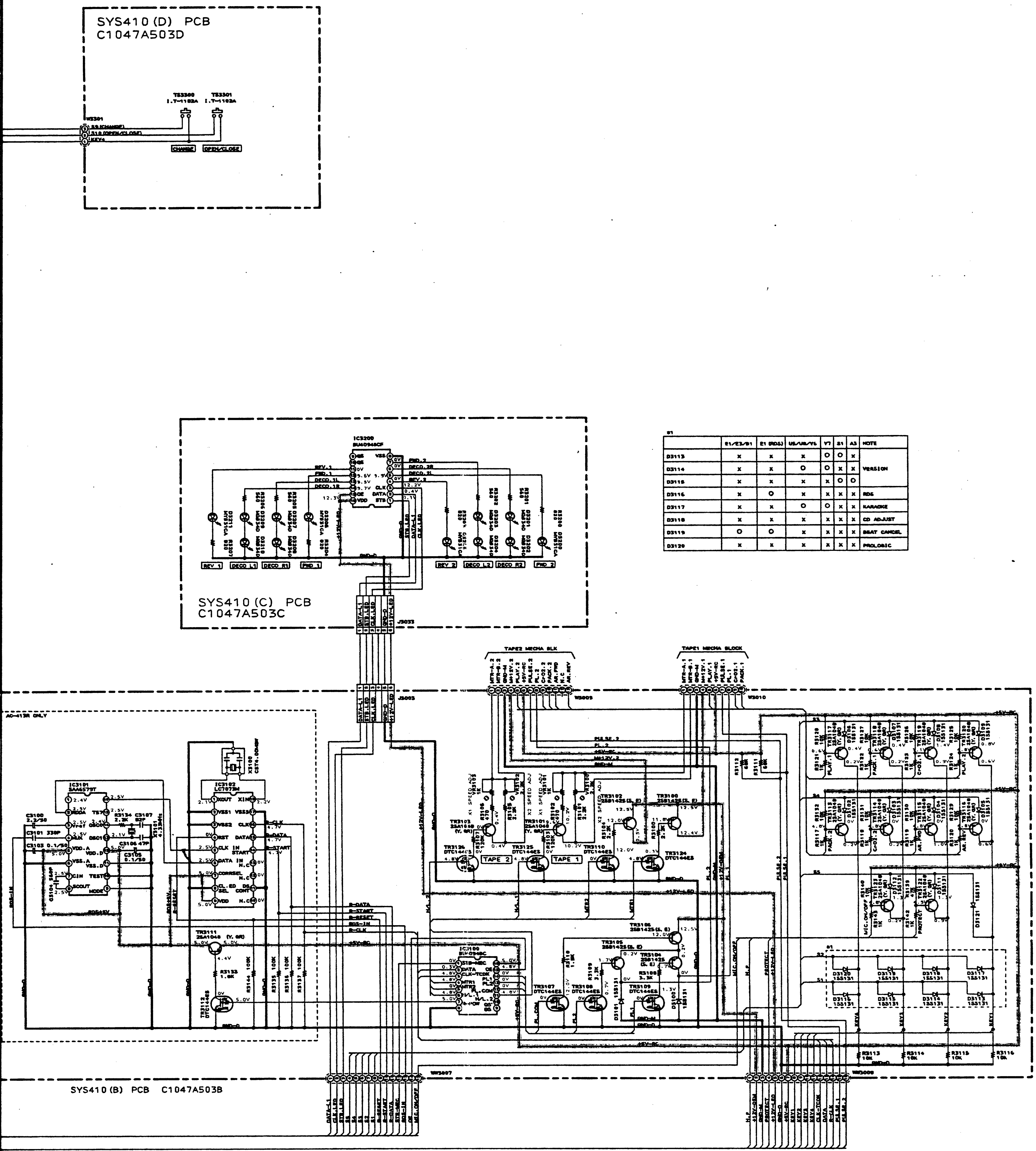

C
WW1401
B
WW1400
385001-02C
REV.1
RELAY PCB
C1047A502C-02
P1402
P1400
P1401

TC-DK(C) PCB C1047A502C


1 3 5
W4412
2 4
1 3 5
J4411

YMC03(C) PCB
C1047A505C


A
B
C
D
E
1
2
3
4
5
6
7
8
IN3001
16-BT-40GK
JS3001
JW
IC3001
MB8157MA-148FP TX2-SYS64-1
PH3001
SPS-445-1
SW3001
ROTARY ENCODER
EC16B24304
VOLUME
IC3004 TA2011S
VR3001
RK11K1140 82K
AC-415K ONLY
J3001
J3002
J3022
TO TC-DK(A) PCB J1002
P3001
X3001
CSTS.00MTW
X3002
IC3003
XL24C02P
P3011
TO MAIN410(A) PCB J11
D3001 1SS131
D3002 1SS131
D3005-D3015:1SS131
DOLBY NR
SW3002
VPS-080
TS3001-3022:I.T-1102A150BM
TIMER
REW
REV
STOP
FWD
FF
TIMER PROG
TUNER
CD1
CD2
CD3
AUX
SLEEP
S-BASS
TAPE1
TAPE2
REC/PAUSE
DUB
MEMO
POWER
VOL/BAL
KARA/DIMMER
KEY1
KEY2
KEY3
KEY4
IC3005
BU4094BCF
IC3007
BU4094BCF
IC3006
BU4094BCF
PAUSE
SET
CH EJ
F EJ
DUBX1
DUBX2
PHD
BASS
W3006
W3007
SYS410 (A) PCB C1047A503A
AC-413R ONLY
IC3101
SYS4


SYS410 (D) PCB
C1047A503D
CHANGE
OPEN/CLOSE
SYS410 (C) PCB
C1047A503C
REV 1
DECO L1
DECO R1
FWD 1
REV 2
DECO L2
DECO R2
FWD 2
TAPE2 MECHA BLK
TAPE1 MECHA BLOCK
AC-413R ONLY
TAPE 2
TAPE 1
SYS410 (B) PCB C1047A503B

S1

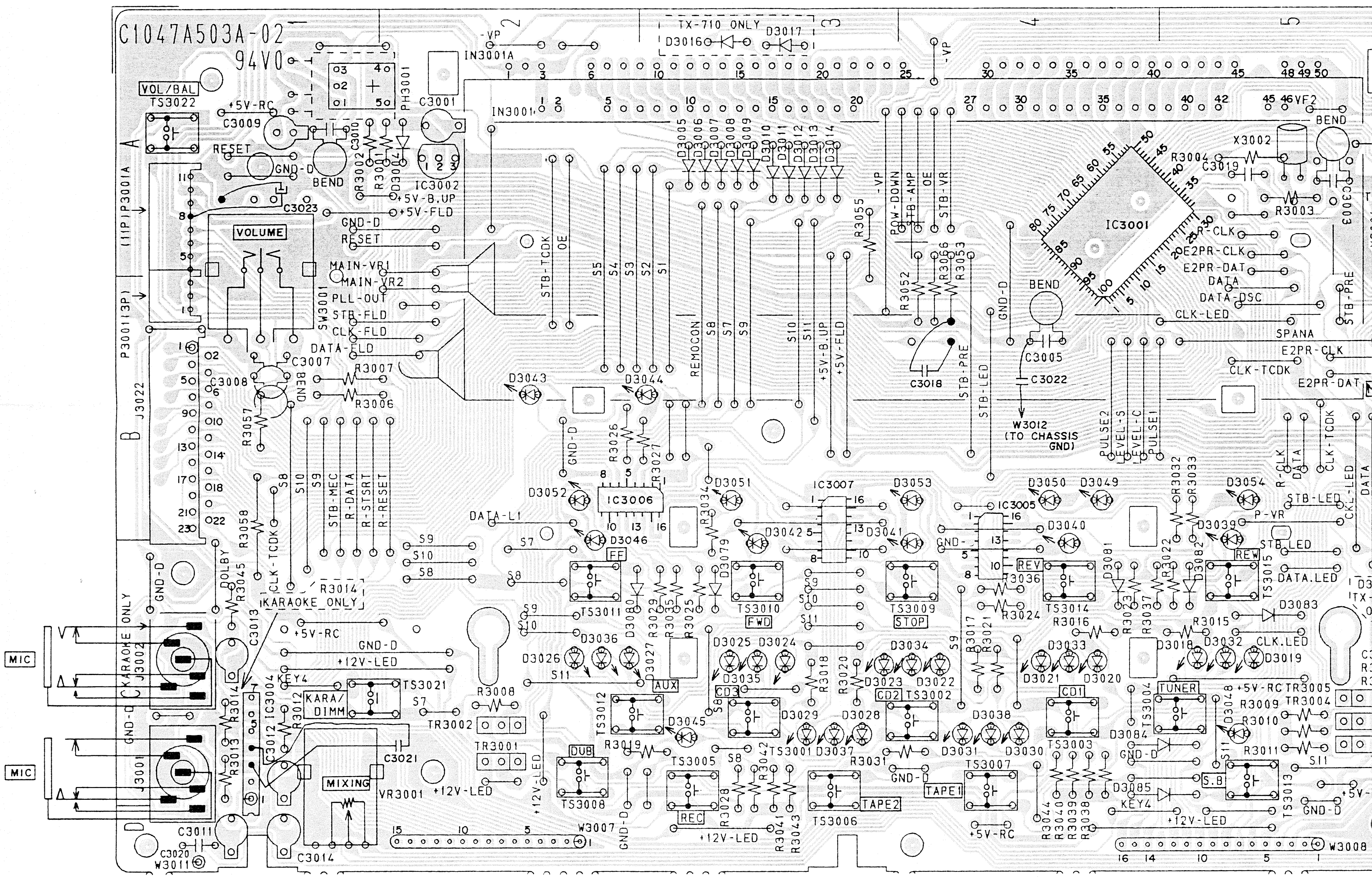
	E1/E3/B1	E1 (RDS)	US/UR/Y6	V7	S1	A3	NOTE
D3113	x	x	x	O	O	x	VERSION
D3114	x	x	O	O	x	x	
D3115	x	x	x	x	O	O	
D3116	x	O	x	x	x	x	RDS
D3117	x	x	O	O	x	x	KARAOKE
D3118	x	x	x	x	x	x	CD ADJUST
D3119	O	O	x	x	x	x	BEAT CANCEL
D3120	x	x	x	x	x	x	PROLOGIC

B (POWER SUPPLY) LINE

MIC SIGNAL LINE

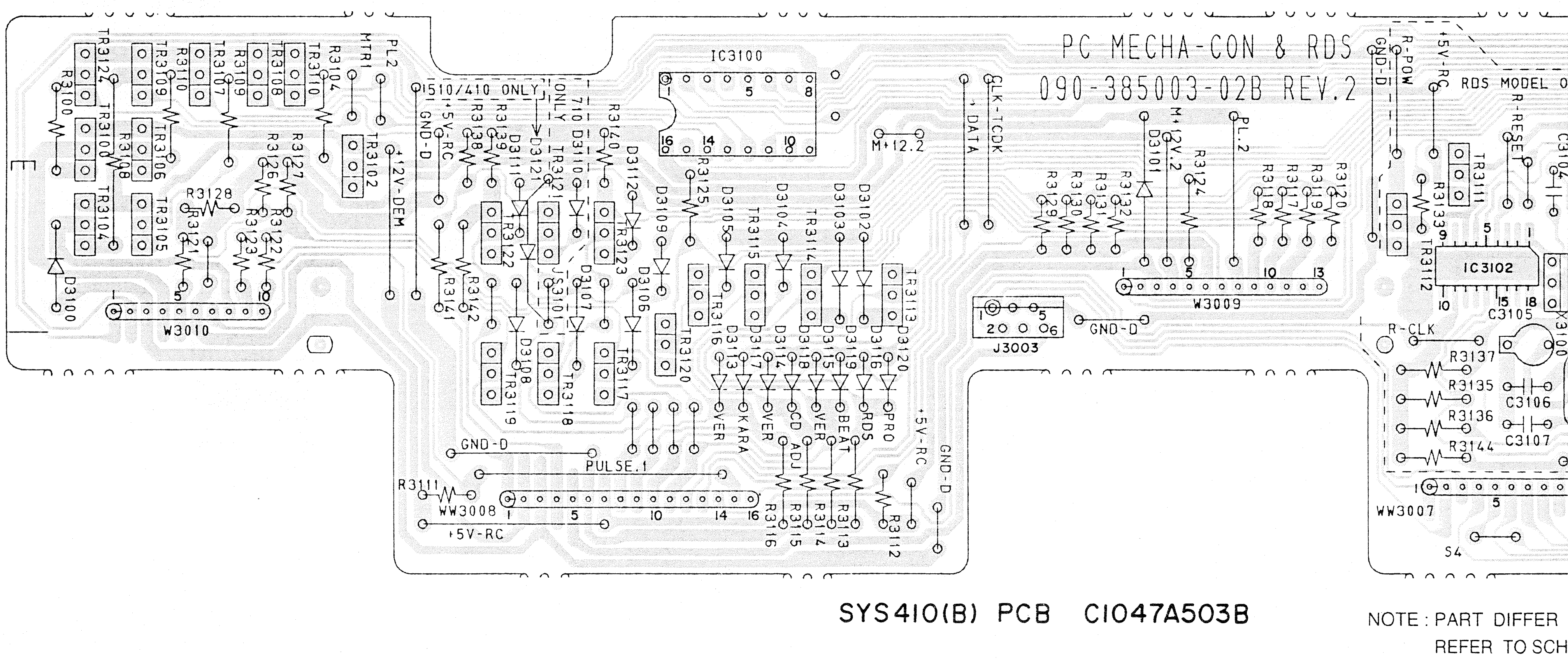
INDICATED VOLTAGES WERE
MEASURED DURING PB MODE.
(TAPE USED: NORMAL TYPE
DOLBY SW: OFF)
(FUNCTION: TAPE-1)

AC-410/413R/415K
SYSCON (400 SERIES)
SCHEMATIC DIAGRAM
No.6-5 C104705M
A0


C1047A503A-02
94V0
VOL/BAL
TS3022
+5V-RC
C3009
RESET
GND-D
BEND
C3023
VOLUME
SW3001
GND-D
RESET
MAIN-VR1
MAIN-VR2
PLL-OUT
STB-FLD
CLK-FLD
DATA-FLD
PH3001
C3001
IC3002
+5V-B.UP
+5V-FLD
IN3001A
IN3001
TX-710 ONLY
D3016
D3017
P3001A
P3001(3P)
J3022
C3007
C3008
R3007
R3006
R3057
R3058
CLK-TCDK
STB-MEC
R-DATA
R-STSRT
R-RESET
R3014
KARAOKE ONLY
DOLBY
R3045
C3013
KARAOKE ONLY
J3002
MIC
J3001
MIC
IC3004
KEY4
KARA/DIMM
TS3021
MIXING
VR3001
C3021
C3011
C3020
W3011
C3014
+12V-LED
+5V-RC
GND-D
TR3002
TR3001
R3008
STB-TCDK
OE
S5
S4
S3
S2
S1
REMOCON
S8
S7
S9
S10
S11
+5V-B.UP
+5V-FLD
D3043
D3044
IC3006
D3052
D3046
DATA-L1
FF
TS3011
D3036
D3026
D3027
AUX
TS3012
D3045
DUB
TS3008
W3007
REC
TS3005
TS3010
FWD
D3025
D3024
D3035
CD3
D3029
D3028
TS3001
D3037
IC3007
D3053
D3042
D3041
D3034
D3023
D3022
CD2
TS3002
TS3009
STOP
D3038
D3031
D3030
TAPE1
TAPE2
TS3006
TS3007
-VP
POW-DOWN
+B-AMP
OE
STB-VR
R3055
R3052
R3066
R3053
C3018
STB-PRE
STB-LED
GND-D
BEND
C3005
C3022
W3012
(TO CHASSIS GND)
IC3001
X3002
R3004
C3019
R3003
R-CLK
E2PR-CLK
E2PR-DAT
DATA
DATA DSC
CLK-LED
SPANA
E2PR-CLK
CLK-TCDK
E2PR-DAT
PULSE2
LEVEL-S
LEVEL-C
PULSE1
IC3005
D3050
D3049
D3040
REV
TS3014
D3033
D3021
D3020
CD1
TS3003
D3054
STB-LED
P-VR
D3039
REW
TS3015
DATA.LED
D3083
D3018
D3032
CLK.LED
D3019
TUNER
TS3004
+5V-RC
TR3005
TR3004
R3009
R3010
R3011
S.B
TS3013
D3084
D3085
KEY4
+12V-LED
+5V-RC
W3008

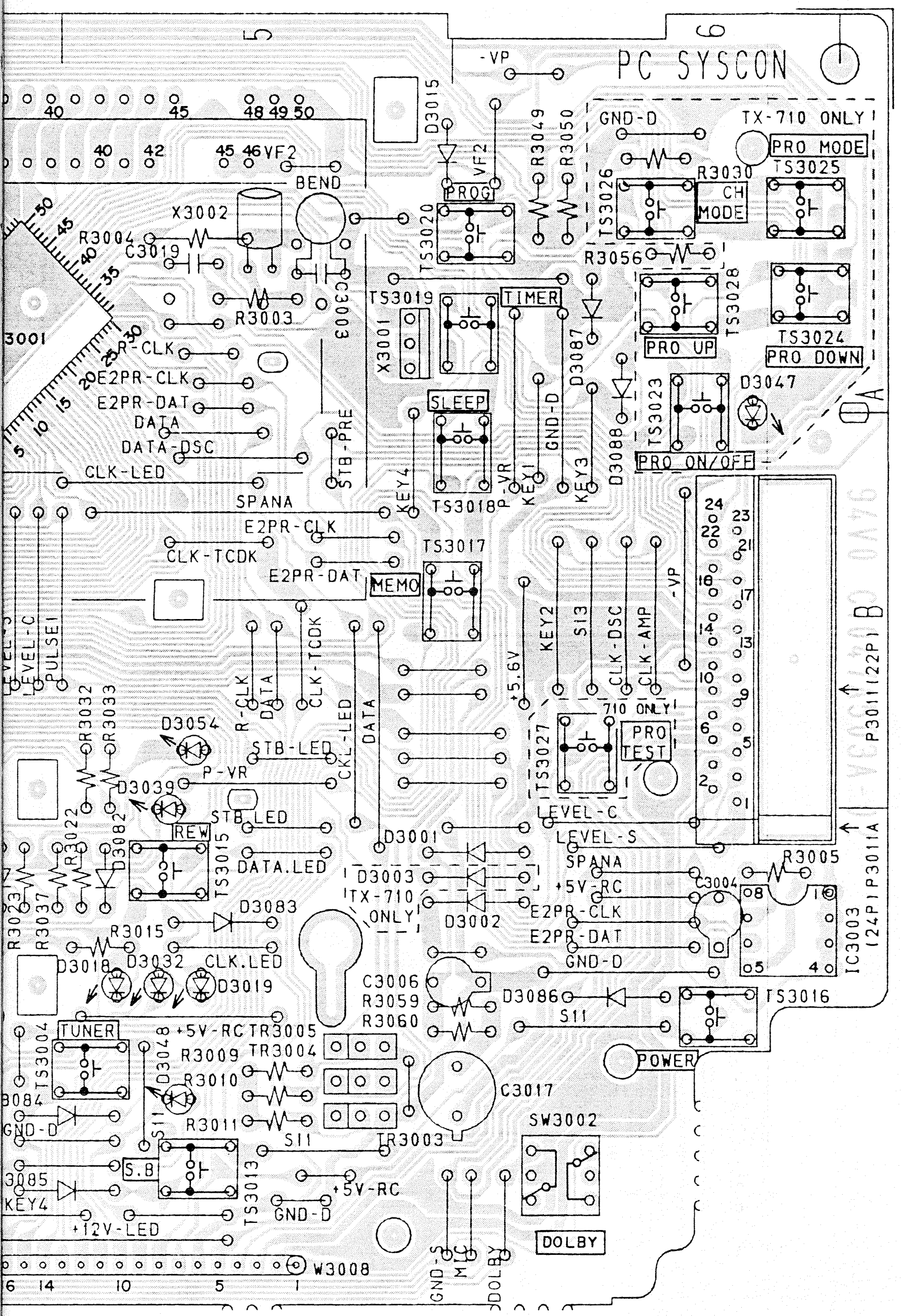
SYS410(A) PCB C1047A503A

NOTE : PART DIFFER DEPENDI
REFER TO SCHEMATIC D
PARTS INFORMATION.

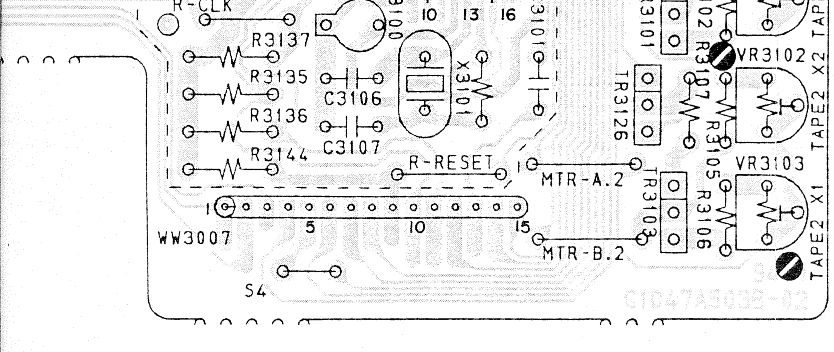

PC MECHA-CON & RDS
090-385003-02B REV.2
TR3124
R3100
TR3109
TR3110
TR3107
TR3108
TR3110
R3104
MTR1
PL2
TR3106
TR3100
TR3108
TR3104
TR3105
R3128
D3100
W3010
TR3102
+12V-DEM
510/410 ONLY
ONLY
710
GND-D
+5V-RC
IC3100
D3112
D3110
D3111
D3109
D3108
D3107
D3106
D3105
D3104
D3103
D3102
TR3122
TR3123
TR3119
TR3118
TR3117
TR3120
TR3116
TR3115
TR3114
TR3113
TR3121
M+12.2
CLK-TCDK
DATA
D3101
PL.2
W3009
J3003
GND-D
VER
KARA
VER
CD
ADJ
VER
BEAT
RDS
PRO
+5V-RC
GND-D
PULSE.1
R3111
WW3008
+5V-RC
R3116
R3115
R3114
R3113
R3112
R-POW
GND-D
+5V-RC
RDS MODEL
R-RESET
TR3111
TR3112
IC3102
C3105
R-CLK
R3137
R3135
C3106
R3136
R3144
C3107
WW3007
S4

SYS410(B) PCB C1047A503B

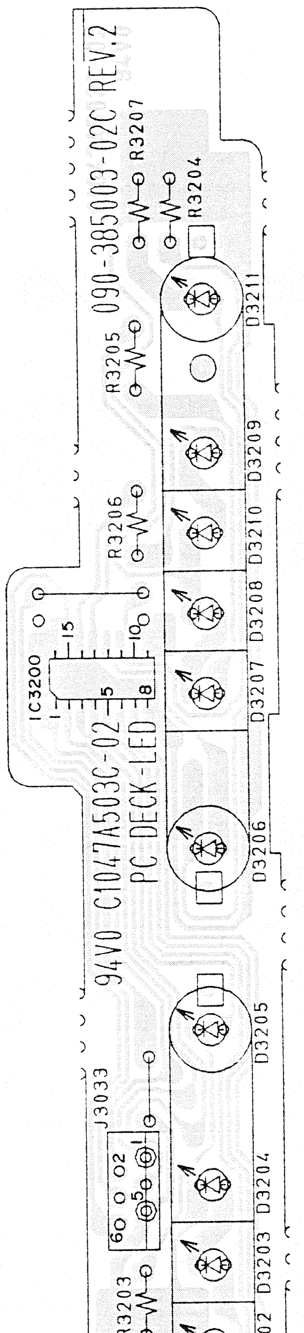
NOTE : PART DIFFER
REFER TO SCH
PARTS INFORM


PC SYSCON
TX-710 ONLY
PRO MODE
CH MODE
PROG
TIMER
SLEEP
PRO UP
PRO DOWN
PRO ON/OFF
MEMO
PRO TEST
REW
TUNER
S.B
POWER
DOLBY
BEND
X3002
X3001
IC3001
P3011(22P)
IC3003 (24P)
W3008
SW3002

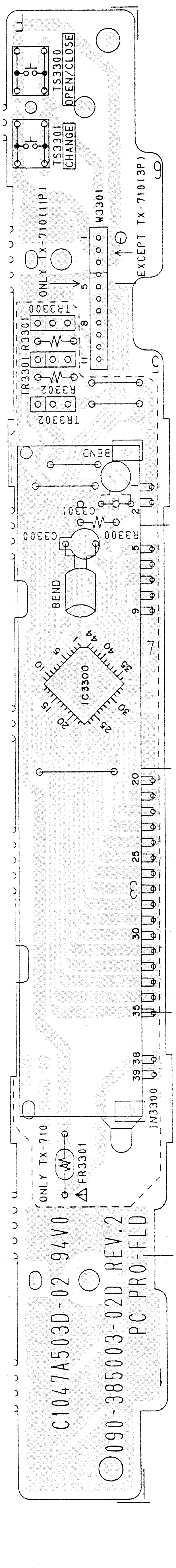
NOTE : PART DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT
PARTS INFORMATION.


& RDS
B REV.2
C1047A503B-02
94V0
RDS MODEL ONLY
IC3102
IC3101
X3101
VR3100
VR3101
VR3102
VR3103
W3007
C1047A503B-02

NOTE : PART DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT
PARTS INFORMATION.


090-385003-02C REV.2
94V0 C1047A503C-02
PC DECK-LED
IC3200
J3033
D3200
D3201
D3202
D3203
D3204
D3205
D3206
D3207
D3208
D3210
D3209
D3211

SYS410(C) PCB C1047A503C

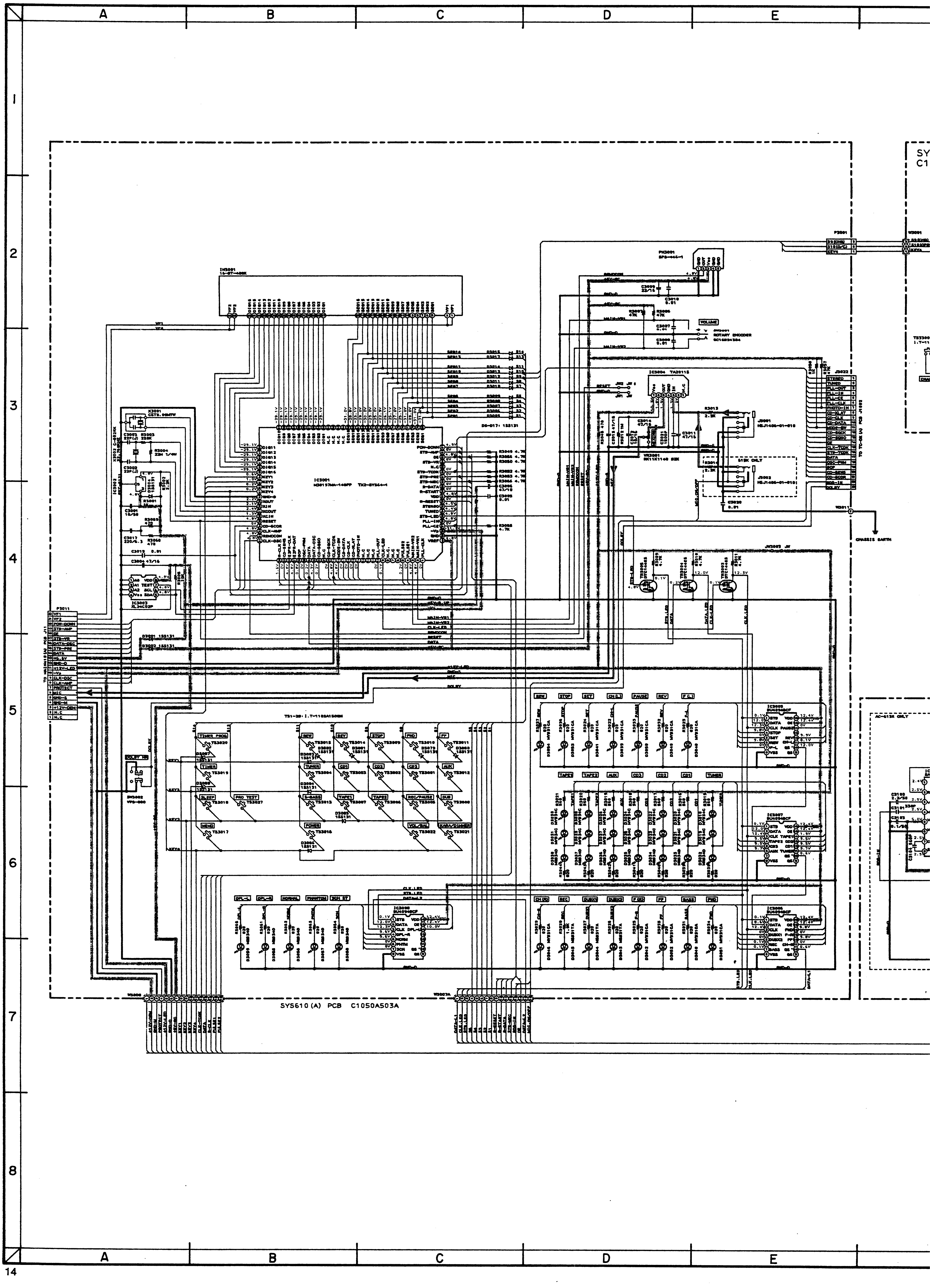

TS3300 OPEN/CLOSE
TS3301 CHANGE
W3301
ONLY TX-710(11P)
EXCEPT TX-710(3P)
BEND
IC3300
FR3301
ONLY TX-710
C1047A503D-02 94V0
090-385003-02D REV.2
PC PRO-FLD

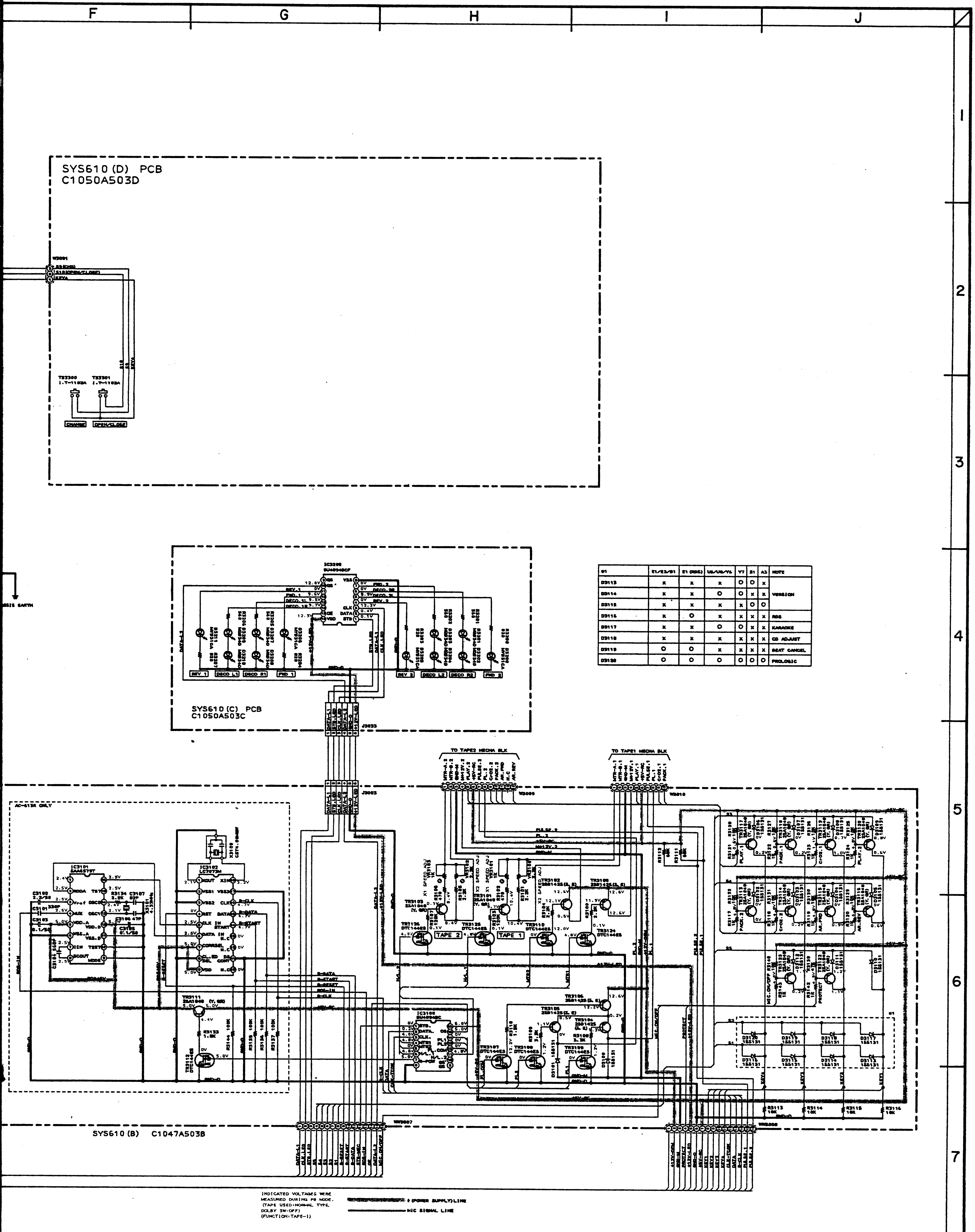
SYS410(D) PCB C1047A503D

NOTE : PART DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT
PARTS INFORMATION.

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY.
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
RECOMMENDED PARTS

AVERTISSEMENT: ⚠ INDIQUE LES COMPOSANTS CRITIQUES DE SECURITE.
POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL,
NE REMPLACER QUE DES PIECES RECOMMANDEES PAR LE FABRICANT


A
B
C
D
E
1
2
3
4
5
6
7
8
SY
C1
IN3001
16-BT-48GK
IC3001
M38197MA-148FP TX2-SY344-1
DS-D17: 1SS131
X3001
IC3003
IC3004 TA2011S
PH3001
VOLUME
ROTARY ENCODER
J3001
J3002
VR3001
CHASSIS EARTH
IC3005 BU4094BCF
IC3006 BU4094BCF
IC3007 BU4094BCF
IC3008 BU4094BCF
TIMER PROG
TIMER
SLEEP
MEMO
PRO TEST
REW
FF
STOP
PHD
TUNER
CD1
CD2
CD3
AUX
S-BASS
TAPE1
TAPE2
REC/PAUSE
DUB
POWER
VOL/BAL
KARA/DIMMER
DOLBY NR
SW3002
SET
CH(L)
PAUSE
REV
F(L)
CH(R)
REC
DUBX1
DUBX2
F(R)
BASS
DPL-L
DPL-R
NORMAL
PHANTOM
3CH ST
AC-613R ONLY
P3011
W3006
W3007A
CHASSIS EARTH
SYS610(A) PCB C1050A503A


F
G
H
I
J
1
2
3
4
5
6
7
8
SYS610 (D) PCB
C1050A503D
W3001
TS3300
TS3301
CHANGE
OPEN/CLOSE
IC3200
BU4094BCF
REV 1
DECO L1
DECO R1
PRO 1
REV 2
DECO L2
DECO R2
PRO 2
SYS610 (C) PCB
C1050A503C
J3033
J3003
TO TAPE2 MECHA BLK
TO TAPE1 MECHA BLK
W3009
W3010
AC-613R ONLY
IC3101
SAA6579T
IC3102
LC7073M
X3100
IC3100
BU4094BC
TAPE 2
TAPE 1
TR3111
TR3112
TR3135
TR3125
TR3110
TR3124
TR3103
TR3101
TR3102
TR3100
TR3106
TR3105
TR3104
TR3107
TR3108
TR3109
D3113
D3114
D3115
D3116
D3117
D3118
D3119
D3120
R3113
R3114
R3115
R3116
KEY1
KEY2
KEY3
KEY4
MIC.ON/OFF
PROTECT
SYS610 (B) C1047A503B
W3007
W3008
DATA-L1
CLK.LED
STB.LED
S5
S4
S3
S2
S1
R-RESET
R-START
R-DATA
STB-MEC
RDS-IN
DATA-L2
MIC.ON/OFF

01	E1/E3/B1	E1 (RDS)	U6/U8/Y6	Y7	S1	A3	NOTE
D3113	x	x	x	O	O	x	VERSION
D3114	x	x	O	O	x	x	
D3115	x	x	x	x	O	O	
D3116	x	O	x	x	x	x	RDS
D3117	x	x	O	O	x	x	KARAOKE
D3118	x	x	x	x	x	x	CD ADJUST
D3119	O	O	x	x	x	x	BEAT CANCEL
D3120	O	O	O	O	O	O	PROLOGIC

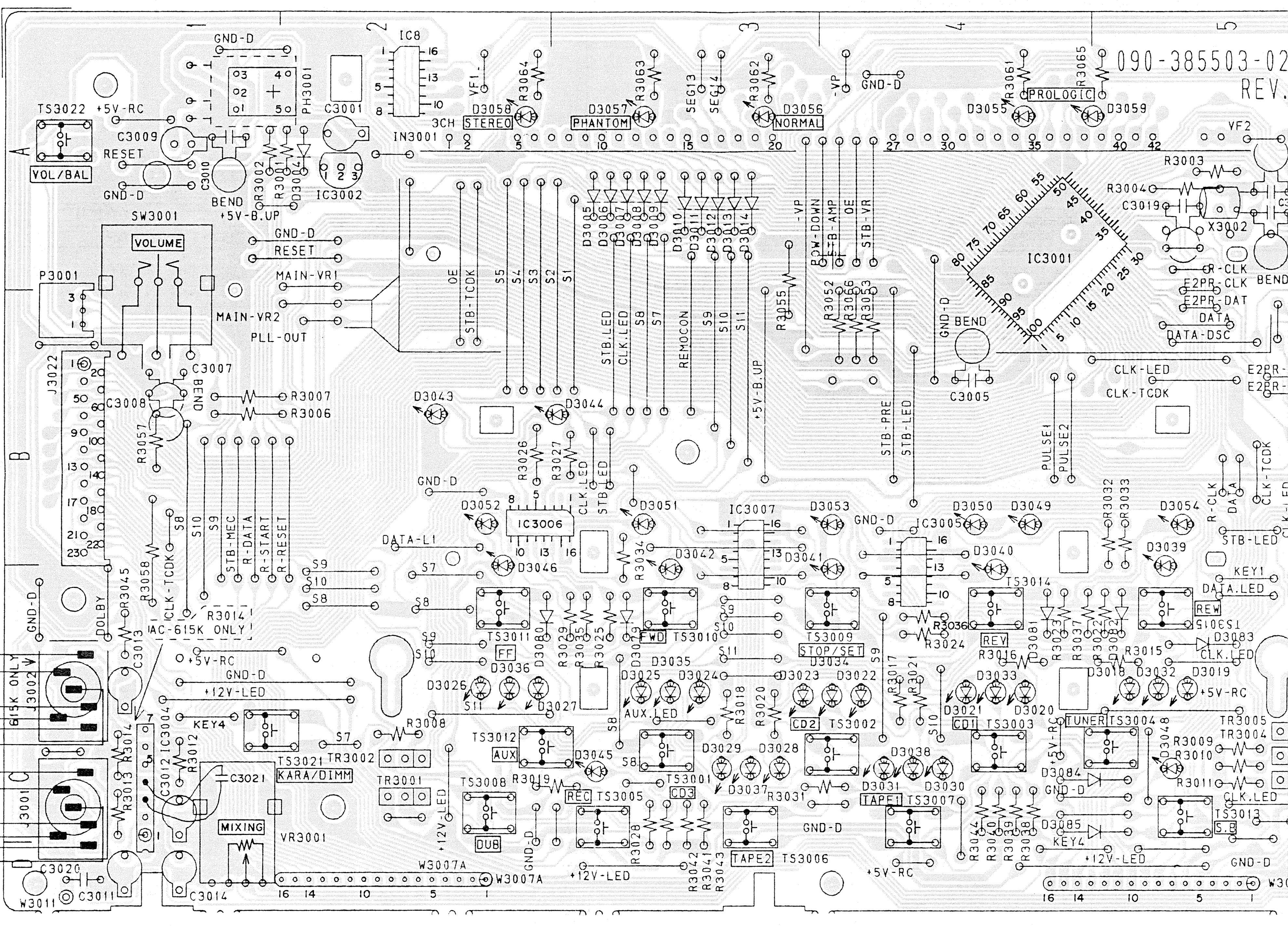
INDICATED VOLTAGES WERE
MEASURED DURING PB MODE.
(TAPE USED:NORMAL TYPE,
DOLBY SW:OFF)
(FUNCTION:TAPE-1)

▬ : + (POWER SUPPLY) LINE

— : MIC SIGNAL LINE

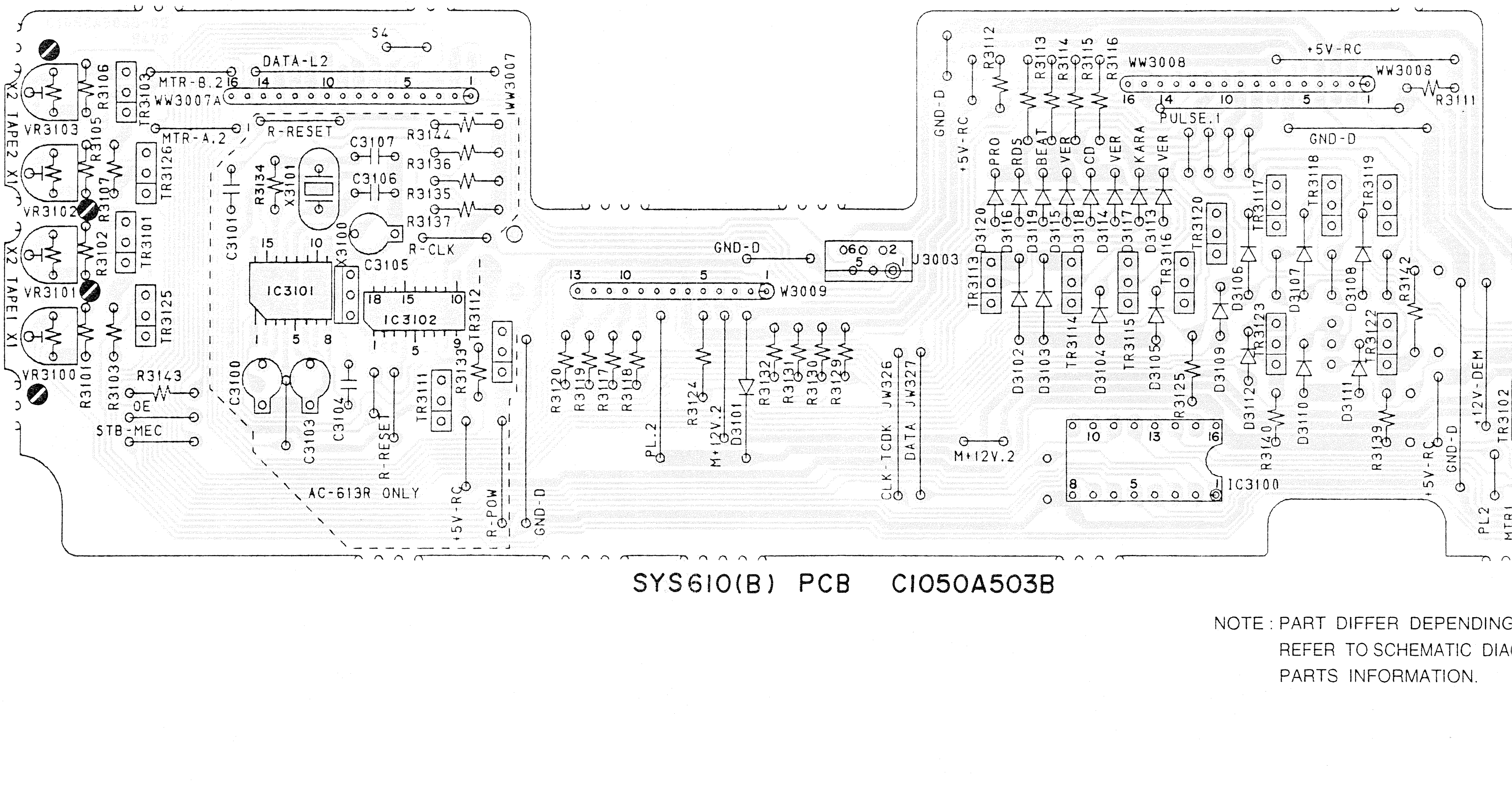
AC-610/613R/615K
SYSCON (600 SERIES)
SCHEMATIC DIAGRAM

No.6-6 C104706M
A0


090-385503-02
REV.
IC8
GND-D
PH3001
TS3022
+5V-RC
C3009
RESET
VOL/BAL
GND-D
C3010
C3001
IC3002
BEND
+5V-B.UP
IN3001
3CH
STEREO
PHANTOM
NORMAL
PROLOGIC
VF1
VF2
R3064
R3063
R3062
R3061
R3065
D3058
D3057
D3056
D3055
D3059
SEG13
SEG14
-VP
SW3001
VOLUME
P3001
MAIN-VR1
MAIN-VR2
PLL-OUT
RESET
IC3001
X3002
R3003
R3004
C3019
R-CLK
E2PR-CLK
E2PR-DAT
DATA
DATA-DSC
CLK-LED
CLK-TCDK
J3022
C3007
C3008
R3007
R3006
R3057
OE
STB-TCDK
S1
S2
S3
S4
S5
S7
S8
S9
S10
S11
STB.LED
CLK.LED
REMOCON
D3043
D3044
R3055
R3052
R3066
R3053
B2W-DOWN
STB-AMP
STB-VR
+5V-B.UP
STB-PRE
STB-LED
C3005
PULSE1
PULSE2
IC3006
IC3007
IC3005
D3052
D3051
D3053
D3050
D3049
D3054
DATA-L1
D3046
D3042
D3041
D3040
D3039
R3032
R3033
STB-LED
KEY1
DATA.LED
R3058
CLK-TCDK
STB-MEC
R-DATA
R-START
R-RESET
R3045
R3014
AC-615K ONLY
DOLBY
TS3011
FF
D3036
D3026
D3027
TS3010
FWD
D3035
D3025
D3024
D3023
D3022
TS3009
STOP/SET
D3034
D3033
D3021
D3020
CD1
REV
R3016
R3015
REW
TS3015
D3083
CLK.LED
D3018
D3032
D3019
+5V-RC
TS3014
R3036
R3024
R3081
R3023
R3037
R3022
R3030
MIC
MIC
615K ONLY
J3002
J3001
C3013
+5V-RC
GND-D
+12V-LED
KEY4
IC3004
C3012
R3013
R3012
C3021
TS3021
TR3002
KARA/DIMM
TR3001
S7
R3008
TS3012
AUX
D3045
R3019
TS3008
REC
TS3005
DUB
MIXING
VR3001
AUX.LED
S8
D3029
D3028
TS3001
CD3
D3037
R3031
CD2
TS3002
R3018
R3020
R3017
R3021
D3038
D3031
D3030
TAPE1
TS3007
TS3003
TUNER
TS3004
D3048
TR3005
TR3004
R3009
R3010
R3011
D3084
GND-D
CLK.LED
TS3013
S.B
D3085
KEY4
+12V-LED
GND-D
TAPE2
TS3006
R3028
R3042
R3041
R3043
R3044
R3040
R3039
R3038
R3026
R3027
R3034
R3029
R3035
R3025
R3080
+12V-LED
+5V-RC
GND-D
W3007A
C3020
C3011
C3014
W3011
16
14
10
5
1

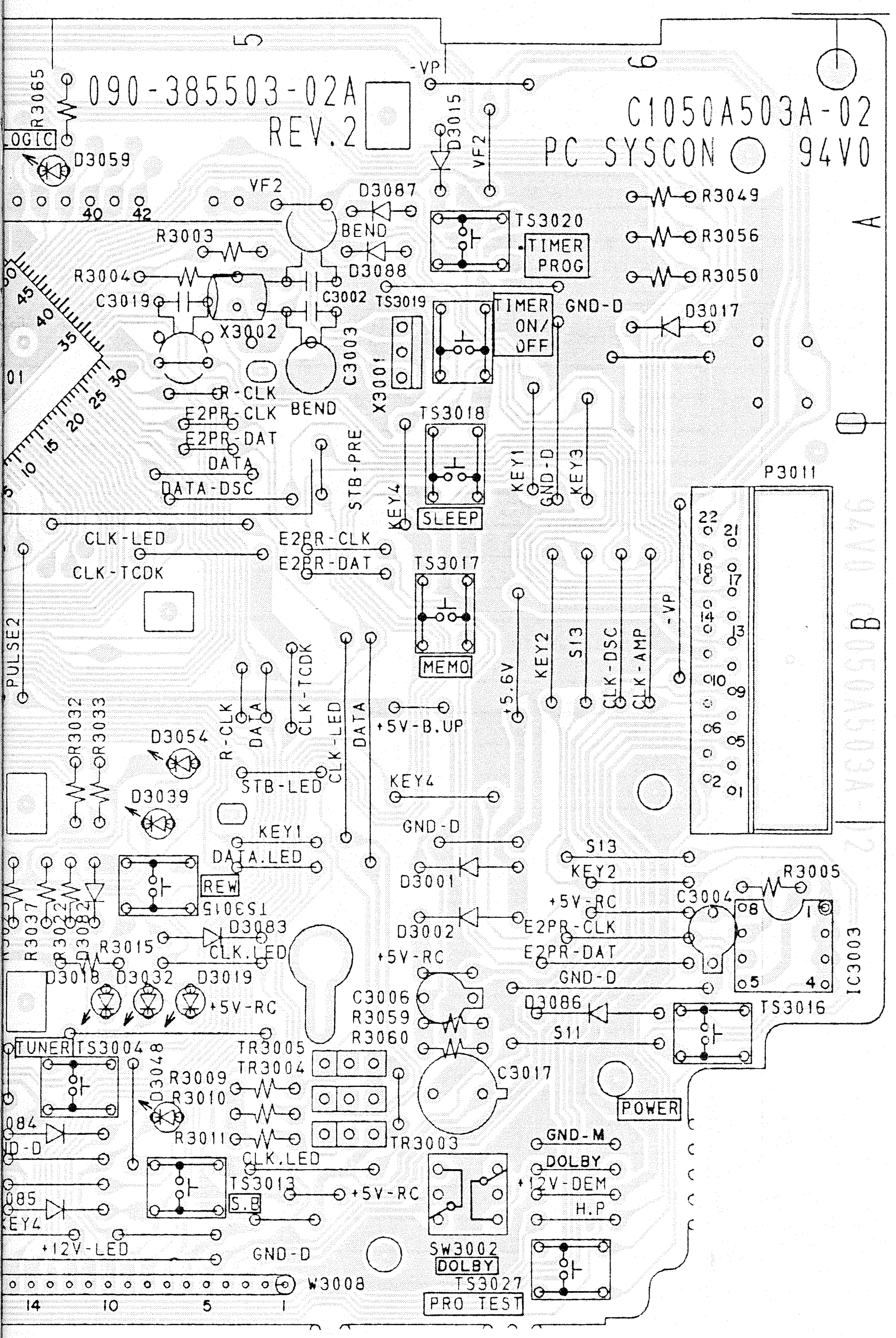
SYS610(A) PCB C1050A503A

NOTE : PART DIFFER
REFER TO SCH
PARTS INFORM

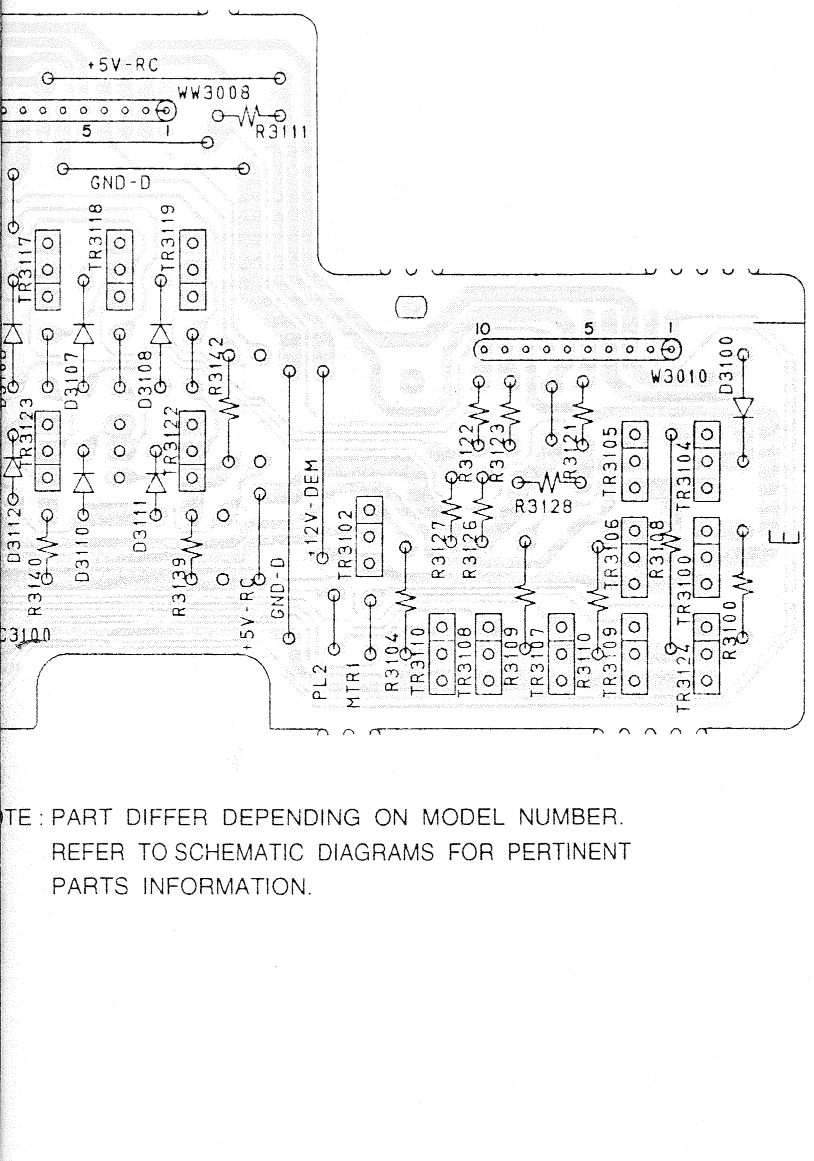

S4
DATA-L2
MTR-B.2
WW3007A
WW3007
MTR-A.2
R-RESET
R3106
R3105
R3107
R3102
R3103
R3101
R3100
VR3103
VR3102
VR3101
VR3100
X2 TAPE2 X1
X2 TAPE1 X1
TR3126
TR3101
TR3125
R3143
OE
STB-MEC
C3107
C3106
R3144
R3136
R3135
R3137
R3134
X3101
C3101
X3100
C3105
R-CLK
IC3101
IC3102
TR3112
C3100
C3103
C3104
R-RESET
TR3111
R3133
AC-613R ONLY
+5V-RC
R-POW
GND-D
GND-D
U3003
W3009
R3120
R3119
R3117
R3118
R3124
PL.2
M+12V.2
D3101
R3132
R3131
R3130
R3129
JW326
JW327
CLK-TCDK
DATA
M+12V.2
GND-D
+5V-RC
R3112
R3113
R3114
R3115
R3116
WW3008
+5V-RC
WW3008
R3111
PULSE.1
GND-D
PRO
RDS
BEAT
VER
CD
VER
KARA
VER
D3120
D3116
D3119
D3115
D3118
D3114
D3117
D3113
TR3113
TR3114
TR3115
TR3116
TR3120
TR3117
TR3118
TR3119
D3102
D3103
D3104
D3105
D3109
D3106
D3107
D3108
R3125
D3112
R3123
R3122
R3142
D3110
D3111
R3140
R3139
IC3100
+5V-RC
+12V-DEM
GND-D
TR3102
PL2

SYS610(B) PCB C1050A503B

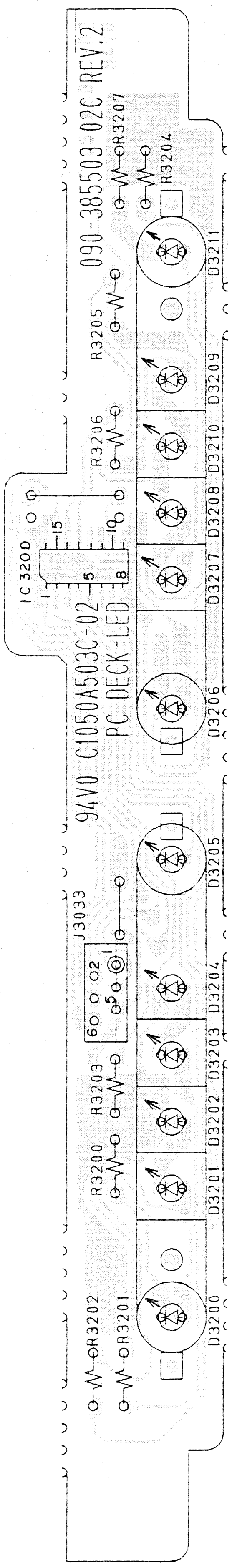
NOTE : PART DIFFER DEPENDING
REFER TO SCHEMATIC DIA
PARTS INFORMATION.


090-385503-02A
REV.2
C1050A503A-02
PC SYSCON
94V0
TS3020
TIMER PROG
TIMER ON/OFF
TS3018
SLEEP
TS3017
MEMO
P3011
REW
TUNER
TS3004
S.B
TS3013
POWER
TS3016
SW3002
DOLBY
TS3027
PRO TEST
W3008
IC3003

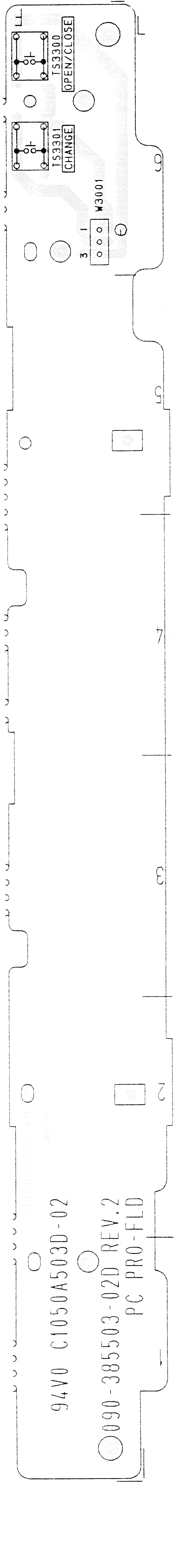
NOTE : PART DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT
PARTS INFORMATION.


+5V-RC
WW3008
R3111
GND-D
W3010
+12V-DEM
R3128

NOTE : PART DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT
PARTS INFORMATION.


090-385503-02C REV.2
94V0 C1050A503C-02
PC DECK-LED
IC3200
J3033

SYS610(C) PCB C1050A503C

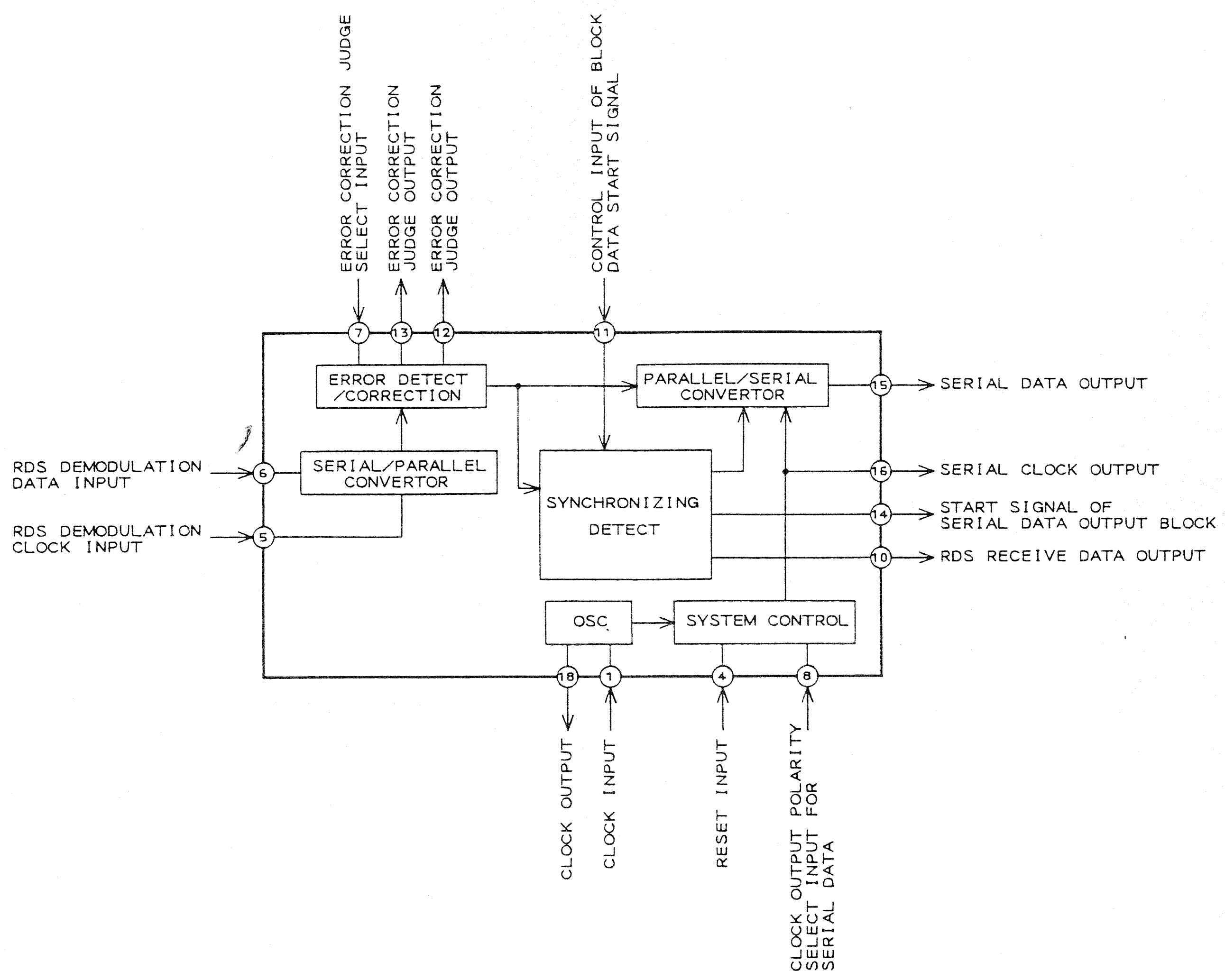

TS3300
OPEN/CLOSE
TS3301
CHANGE
W3001
94V0 C1050A503D-02
090-385503-02D REV.2
PC PRO-FLD

SYS610(D) PCB C1050A503D

CXA1782BQ (CD RF I-V AMP/RF AMP)

PIN No.	PORT NAME	I/O	FUNCTION
1	FEO	O	Focus drive output.
2	FEI	I	Focus error signal input.
3	FDFCT	I	Time constant capacitor connecting terminal at time of defect.
4	FGD	I	Connect condenser for Focus servo gain control.
5	FLB	I	Connect condenser for Focus servo correction.
6	FE-O	O	Focus drive output.
7	FE-M	I	FOCUS AMP Inverting input.
8	SRCH	I	Connect condenser for Focus search wave.
9	TGU	I	Connect condenser for Trackink gain select.
10	TG2	I	Connect condenser for Tracking gain select.
11	FSET	I	Terminal for peak setting for Focus tracking phase compensation.
12	TA-M	I	Tracking AMP Inverting input.
13	TA-O	O	Tracking drive output.
14	SL-P	I	Sled AMP non-inverting input.
15	SL-M	I	Sled AMP Inverting input.
16	SL-O	O	Sled drive output.
17	ISET	I	Focus search, Track jump and slide kick current input.
18	Vcc	–	+5 V
19	CLK	I	Clock signal input from the CD MI-COM.
20	XLT	I	Lutch signal input from the CD MI-COM.
21	DATA	I	Data signal input from the CD MI-COM.
22	XRST	I	RESET input.
23	C.OUT	O	Track count signal output.
24	SENS	O	FZC,DFCT,TZC,GAIN and BAL output.
25	FOK	O	Focus OK signal output.
26	CC2	I	Input terminal of DEFECT bottom hold output which is supplied through capcitor.
27	CC1	O	DEFECT bottom hold output terminal.
28	CB	I	DEFECT bottom hold capacitor connecting terminal.
29	CP	I	Terminal for connection of MIRR hold capacitor. (Non inverted input terminal of MIRR comparator.)
30	RF-I	I	Input terminal of RF summing AMP output which is supplied through a capacitor.
31	RF-O	O	RF summing AMP output.
32	RF-M	I	RF summing AMP inverted input terminal.
33	LD	O	APC AMP output terminal.
34	PHD	I	APC AMP input terminal.
35	PHD1	I	RF I-V AMP inverted input terminal (for photo diode A+C of pick up)
36	PHD2	I	RF I-V AMP inverted input terminal (for photo diode B+D of pick up)
37	FE-BIAS	I	Terminal for bias adjustment of focus error amp.
38	F	I	RF I-V AMP inverted input terminal (for photo diode F of pick up)
39	E	I	RF I-V AMP inverted input terminal (for photo diode E of pick up)
40	EI	–	Not used
41	VEE	–	GND
42	TEO	O	Tracking error amp output terminal. (E-F signal output.)
43	LPFI	I	BAL adjustment of comperator input terminal.
44	TEI	I	Tracking error input terminal.
45	ATSC	I	Window comperator input input terminal for ATSC detection.
46	TZC	I	Input terminal of tracking zero cross comparator.
47	TDFCT	I	Time constant capacitor connecting terminal at time of defect.
48	VC	O	(VCC+VEE)/2 DC voltage output terminal.

LC7073M (RDS DATA PROCESS)


ERROR CORRECTION JUDGE SELECT INPUT
ERROR CORRECTION JUDGE OUTPUT
ERROR CORRECTION JUDGE OUTPUT
CONTROL INPUT OF BLOCK DATA START SIGNAL
7
13
12
11
ERROR DETECT /CORRECTION
PARALLEL/SERIAL CONVERTOR
15
SERIAL DATA OUTPUT
RDS DEMODULATION DATA INPUT
6
SERIAL/PARALLEL CONVERTOR
SYNCHRONIZING DETECT
16
SERIAL CLOCK OUTPUT
14
START SIGNAL OF SERIAL DATA OUTPUT BLOCK
RDS DEMODULATION CLOCK INPUT
5
10
RDS RECEIVE DATA OUTPUT
OSC
SYSTEM CONTROL
18
1
4
8
CLOCK OUTPUT
CLOCK INPUT
RESET INPUT
CLOCK OUTPUT POLARITY SELECT INPUT FOR SERIAL DATA

CXD2508AQ (CD DIGITAL SIGNAL PROCCESS & SYSTEM CONTRO

Pin No.	PORT NAME	I/O	FUN
1	SCOR	O	H output when either sub code S
2	SBSO	O	Serial output of Sub P to W.
3	EXCK	I	Clock input for SBSO read out.
4	SQSO	O	Serial output of SUBQ 80 bit.
5	SQCK	I	Clock input for SQSO read out.
6	MUTE	I	Muteing control. (H : MUTE, L :
7	SENS	O	SENS output. Output to the OPE
8	$\overline{\text{XRST}}$	I	System reset. Reset at L.
9	DATA	I	Serial data input from THE OPE
10	XLAT	I	Latch input from the OPERATIO edge of the pulse.)
11	CLOK	I	Serial data transmission clock in
12, 53	Vss	–	GND
13	SEIN	I	Sense input from SSP.
14	CNIN	I	Track jump number count signal
15	DATO	O	Serial data output to SSP.
16	XLTO	O	Serial data latch output to SSP.
17	CLKO	O	Serial data transmission clock o
18	SLED SW	I	Innermost position ON/OFF dete
19	SPOB	I	Innermost position ON/OFF dete
20	SPOC	I	Innermost position ON/OFF dete
21	XLSL	I	X'tal selection input terminal. L w
22	LD ON/OFF	O	Laser diode ON/OFF control.
23	FOK	I	Focus OK input terminal. For SE
24	MON	–	Not used
25	MDP	O	Servo control for spindle motor.
26	MDS	–	Not used
27	LOCK	–	Not used
28	TEST	–	Regular GND for TEST terminal
29	FILO	O	Filter output for master PLL. (sla
30	FILI	I	Filter input for master PLL.
31	PCO	O	Charge pump output for master
33, 75, 76	AVss1 ~ 3	–	GND
34	CLTV	I	VCO control voltage input for m
36	RF	I	EFM signal input.
37	BIAS	I	Asymmetry circuir constant curr
38	ASYI	I	Asymmetry compilasion voltage
39	ASYO	O	EFM full swing output. (L = Vss,
40	ASYE	I	L : Asymmetry circuit OFF H :
41	WDCK	–	Not used
42	LRCK	O	D/A interface for 48 bit slot. LR
43	LRCKI	I	LR clock input to DAC.
44	PCMD	O	Serial data from D/A interface.
45	PCMDI	I	Audio data input to DAC.
46	BCK	O	Bit clock from D/A interface.
47	BCKI	I	Bit clock input to DAC.
48	GTOP	–	Not used
49	XUGF	–	
50	XPCK	–	
51	GFS	–	
52	RFCK	–	
54	C2PO	–	
55	XROF	–	
56	MNT3	–	
57	MNT1	–	
58	MNT0	–	
59	FSTT	–	
60	C4MR	–	
61	DOUT	O	Digital out terminal.
62	EMPH	O	H output when a playback disc
63	EMPHI	I	De-emphasis control input. (H
64	WFCK	O	WFCK (Write Frame Clock) ou
65	ZEROL	–	Not used
66	ZEROR	–	Not used
67, 79, 80	DTS1 ~ 3	–	GND
69	NLPWM	O	L-ch PWM output. (opposite ph
70	LPWM	O	L-ch PWM output. (in-phase)
73	XTAI	I	33.8688 MHz X'tal oscillation c
74	XTAO	O	33.8688 MHz X'tal oscillation c
77	NRPWM	O	R-ch PWM output. (opposite p
78	RPWM	O	R-ch PWM output. (in-phase)

YSTEM CONTROL MI-COM)

FUNCTION
n either sub code S0 or S1 is detected.
of Sub P to W.
r SBSO read out.
of SUBQ 80 bit.
r SQSO read out.
ol. (H : MUTE, L : CANCEL)
Output to the OPERATION MI-COM.
Reset at L.
put from THE OPERATION MI-COM.
om the OPERATION MI-COM. (Latching of serial data at falling ulse.)
ansmission clock input from the OPERATION MI-COM.
rom SSP.
umber count signal input.
utput to SSP.
tch output to SSP. (Latching at fallingedge of the pulse.)
ansmission clock output to SSP.
sition ON/OFF detection input of sled motor. (Input A)
sition ON/OFF detection input of sled motor. (Input B)
sition ON/OFF detection input of sled motor. (input C)
n input terminal. L when X'tal is 16.9344 MHz. H when 33.8688 MHz.
ON/OFF control.
put terminal. For SENS output and servo automatic sequencer.
l for spindle motor.
for TEST terminal.
for master PLL. (slave = digital PLL)
r master PLL.
p output for master PLL.
voltage input for master.
nput.
circuir constant current input.
compilasion voltage input.
ng output. (L = V_{SS}, H = V_{DD})
ry circuit OFF H : Asymmetry circuit ON.
e for 48 bit slot. LR clock f = Fs
ut to DAC.
rom D/A interface.
nput to DAC.
m D/A interface.
ut to DAC.
erminal.
hen a playback disc is emphasised. L output when no emphasis.
is control input. (H : ON, L : OFF)
te Frame Clock) output.
output. (opposite phase)
output. (in-phase)
Hz X'tal oscillation circuit input.
Hz X'tal oscillation circuit output.
output. (opposite phase)
output. (in-phase)

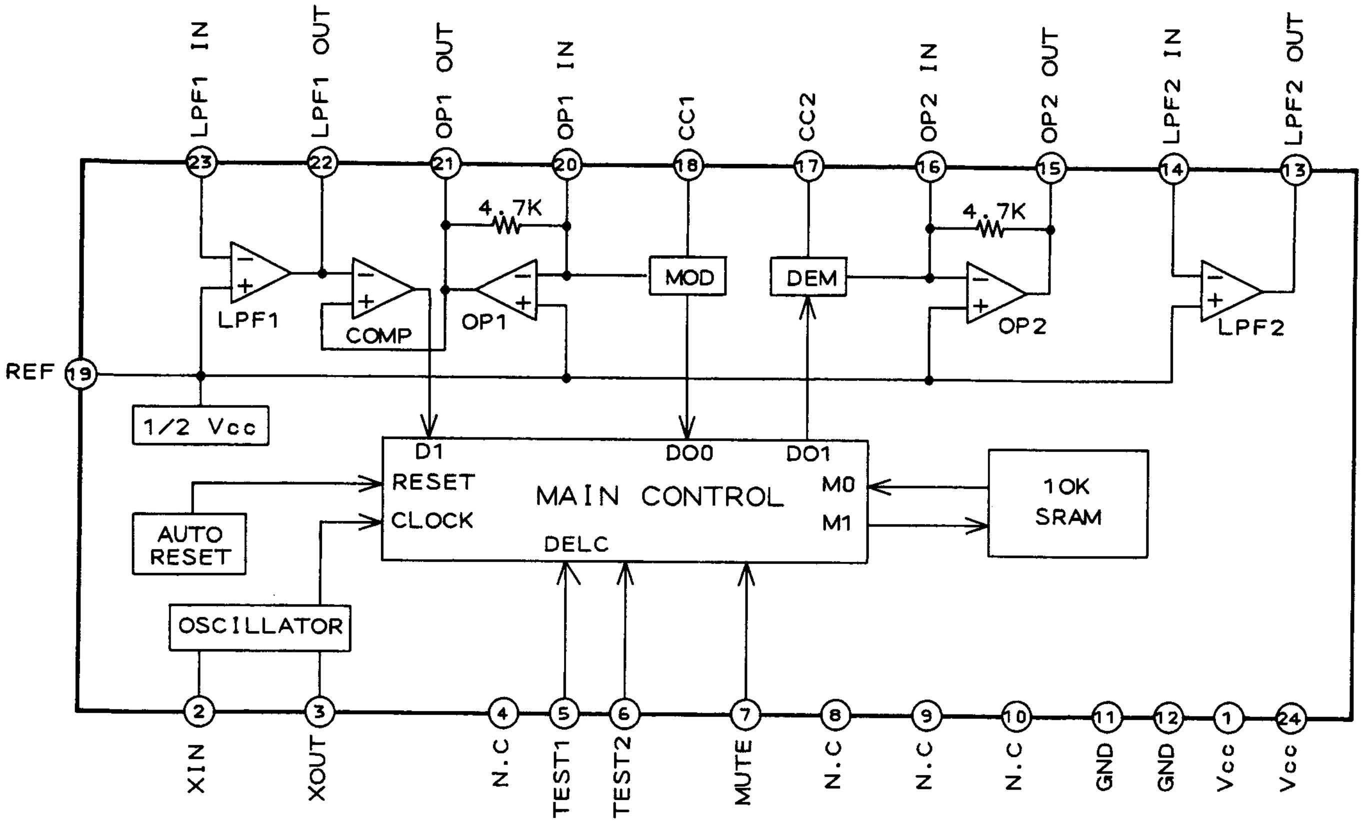
M38197MA-148/149FP (SYSTEM CONTROL MI-COM)

Pin No	PORT NAME	I/O	FUNCTION
1	PLL CLK	O	PLL clock signal output to the TUNER UNIT.
2	MAIN VR1	I	2 bit encoder input for electric volume control.
3	MAIN VR2		
4	PULSE 1	I	TAPE 1 reel pulse input.
5	PULSE 2	I	TAPE 2 reel pulse input.
6	LEVEL S	I	A/D input for surround level meter.
7	LEVEL C	I	A/D input for center level meter.
8	SPANA	I	A/D input for spectrum analyzer indication.
9	CLK LED	O	Clock output for LED section expansion IC.
10	PLL OUT	O	PLL control output to the TUNER UNIT.
11	STB FLD	O	Strobe pulse output to DOLBY PRO-LOGIC FLD drive IC.
12	CLK FLD	O	Clock output to DOLBY PRO-LOGIC FLD drive IC.
13	DATA FLD	O	Data output to DOLBY PRO-LOGIC FLD drive IC.
14	PHOTO IN	I	Input from the TRAY rotation position detect photo sensor.
15	CD XLAT	O	Latch output for the CD MI-COM.
16	CD CLK	O	Serial clock output to the CD MI-COM.
17	CD DATA	O	Serial data output to the CD MI-COM.
18	MODE SW	I	A/D input from the CD's open, close and clamp switches.
19	CLK TCDK	O	Clock output for controlling the expansion IC of the TUNER/CD/DECK section.
20	CD SQCK	O	SQCK clock output to the CD MI-COM.
21,85	N.C	–	No connection.
22	CD SQSO	I	SUBQ 80 bits serial input.
23	DATA DSC	O	Serial data output for controlling the DIGITAL SOUND CONTROL IC.
24	DATA	O	Serial data output to the expansion ICs (for KEY control & EVR ICs, etc.).
25	OSC PWM	O	Erasing OSC level control output.(PWM)
26	BOP	I	Blank output pulse input. (L : blank)
27	E^{2}PR DAT	I/O	EEP ROM serial data input/output.
28	E^{2}PR CLK	O	Serial clock output to EEP ROM.
29	CD SENS	I	Input pin for reading verious data from the CD MI-COM.
30	R CLK	I	Clock input from RDS data processor.
31	CLK DSC	O	Clock output to the DIGITAL SOUND CONTROLLOR.
32	REMOCON	I	Remote control signal input.
33	CLK AMP	O	Clock output to the expansion ICs (EVR, Key control, etc. among the PRE/MAIN AMP section).
34	CD SCOR	I	Sub code detect input from the CD MI-COM. (H : sub code 0 or 1 is detected)
35	RESET	I	Reset input
36	XC IN	I	32.768 kHz X'tal input for clock.
37	XC OUT	O	Output to the 32.768 kHz X'tal.
38	X IN	I	8.0 MHz X'tal input.
39	X OUT	O	Output to the 8.0 MHz X'tal.
40	GND-D	–	Digital ground.
41 - 44	KEY1 - 4	I	Key matrix input from the operation switches.
45 - 60	DIG 1 - 16	O	System FLD's grid drive output.
61 - 80	SEG 1 - 20	O	System FLD's segment drive output. (SEG 17~20 : 700 series models only)
81	POW DOWN	I	Back up voltage detection input. (H : normal, L : Power down)
82	STB AMP	O	Strobe pulse output for AMP section expansion IC.
83	OE	O	Output enable control for expansion ICs. (L : enable, H : expansion IC output → high impedance).
84	STB VR	O	Strobe pulse output for EVR (electric volume) IC.
86	STB TCDK	O	Strobe pulse output for TUNER/DECK/CD section expansion ICs.
87	STB PRE	O	Strobe pulse output for PRE AMP section expansion IC.
88	STB MEC	O	Strobe pulse output for DECK MECHA. section expansion IC.
89	R DATA	I	Data input from RDS data processor.
90	R START	I	Start signal input from RDS data processor.
91	VCC	–	+5 V power supply.
92	R RESET	O	Reset output to RDS error correction IC. (L : reset)
93	STEREO	I	A/D input for the "STEREO" indicator.
94	TUNED	I	A/D input for the "TUNED" indicator.
95	STB LED	O	Strobe pulse output for LED section expansion IC.
96	PLL IN	I	PLL control input from the tuner unit.
97	PLL CE	O	PLL chip enable output to the tuner unit.
98	–VP	I	Negative power supply for FLD blanking.
99	VSS	–	To be grounded.
100	VREF	I	Reference voltage input. (+5 V)

M62422FP (SOUND CONTROLLER)

Pin No	PORT NAME	I/O	FUNCTION
1	CLOCK	I	Clock signal input pin for data transmission.
2	DATA	I	Control data input pin.
3	DVDD	–	Power supply for internal logic circuit.
4	VCUT	–	Capacitor connecting pin for vocal cut.
5	SUROUT	O	This pin outputs surround (L-R or L+R) signal and vocal cut signal.
6	IN1	I	Channel 1 input pin.
7	KEYCON1	O	Output pin to the key control circuit.
8	MIC IN1	I	Mic signal input pin during KARAOKE function.
9	INBASS1	I	BASS resonant bufferring AMP input pin.
10	NFBASS1	O	BASS resonant bufferring AMP output pin.
11	FBASS1	–	BASS BPF (resonant AMP) connecting pin.
12	INMID1	I	MID resonant bufferring AMP input pin.
13	NFMID1	O	MID resonant bufferring AMP output pin.
14	FMID1	–	MID BPF (resonant AMP) connecting pin.
15	FTRE1	–	TREBLE BPF connecting pin.
16	REC OUT1	O	Channel 1 REC OUT pin.
17	FBB1	I	BASS boost BPF (resonant AMP) connecting pin.
18	NFBB1	O	BASS boost resonant bufferring AMP output pin.
19	INBB1	I	BASS boost resonant bufferring AMP input pin.
20	OUT1	O	Channe 1 output pin.
21	AGND	–	Internal analog circuit grounding pin.
22	AVss	–	Negative power supply pin for internal analog circuit.
23	OUT2	O	Channe 2 output pin.
24	INBB2	I	BASS boost resonant bufferring AMP input pin.
25	NFBB2	O	BASS boost resonant bufferring AMP output pin.
26	FBB2	–	BASS boost BPF (resonant AMP) connecting pin.
27	REC OUT2	O	Channel 2 REC OUT pin.
28	FTRE2	–	TREBLE BPF connecting pin.
29	FMID2	–	MID BPF (resonant AMP) connecting pin.
30	NFMID2	O	MID resonant bufferring AMP output pin.
31	INMID2	I	MID resonant bufferring AMP input pin.
32	FBASS2	–	BASS BPF (resonant AMP) connecting pin.
33	NFBASS2	O	BASS resonant bufferring AMP output pin.
34	INBASS2	I	BASS resonant bufferring AMP input pin.
35	MIC IN2	I	Mic signal input pin during KARAOKE function.
36	KEYCON2	O	Output pin to the key control circuit.
37	IN2	I	Channel 2 input pin.
38	SUR R	–	Time constant setting capacitor connectig pin for the surround circuit.
39	SUR C	–	Time constant setting capacitor connectig pin for the surround circuit.
40	AVDD	–	Positive power supply pin for internal analog circuit.
41	DGND	–	Internal logic circuit grounding pin.
42	N.C	–	No connection.

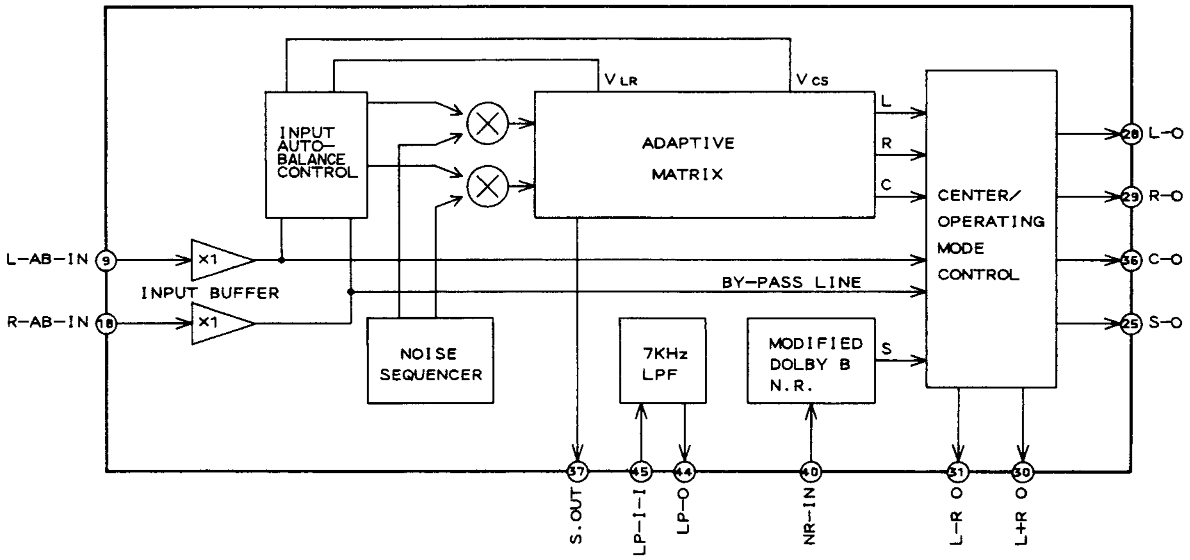
M65843AFP (DIGITAL ECHO)



LPF1 IN
LPF1 OUT
OP1 OUT
OP1 IN
CC1
CC2
OP2 IN
OP2 OUT
LPF2 IN
LPF2 OUT
23
22
21
20
18
17
16
15
14
13
4.7K
4.7K
LPF1
COMP
OP1
MOD
DEM
OP2
LPF2
REF
19
1/2 Vcc
D1
DO0
DO1
RESET
MAIN CONTROL
M0
10K SRAM
CLOCK
M1
DELC
AUTO RESET
OSCILLATOR
2
3
4
5
6
7
8
9
10
11
12
1
24
XIN
XOUT
N.C
TEST1
TEST2
MUTE
N.C
N.C
N.C
GND
GND
Vcc
Vcc

PIN No.	PORT NAME	I/O	FUNCTION
1	VDD	–	+5 V power supply for digital section.
2	X IN	I	X'tal OSC input.
3	X OUT	–	X'tal OSC output.
4	NC	–	No connection.
5	TEST 1	I	Test pin (fixed H in the normal condition).
6	TEST 2	I	Test pin (fixed L in the normal condition).
7	MUTE	I	Mute control input (L : mute).
8 ~ 10	NC	–	No connection.
11	D.GND	–	Digital ground.
12	A.GND	–	Analog ground.
13	LPF2 OUT	O	Constructs the output side low pass filter from the externally connected capacitor & resistor.
14	LPF2 IN	I	
15	OP2 OUT	O	Constructs the integrator for demodulation from the externally connected capacitor & resistor.
16	OP2 IN	I	
17	CC2	–	Current control for demodulator ADM control.
18	CC1	–	Current control for modulator ADM control.
19	REF	–	Analog reference voltage (1/2 Vcc).
20	OP1 IN	I	Constructs the integrator for modulation from the externally connected capacitor & resistor.
21	OP1 OUT	O	
22	LPF1 OUT	O	Constructs the input side low pass filter from the externally connected capacitor & resistor.
23	LPF1 IN	I	
24	Vcc	–	+5 V analog power supply.

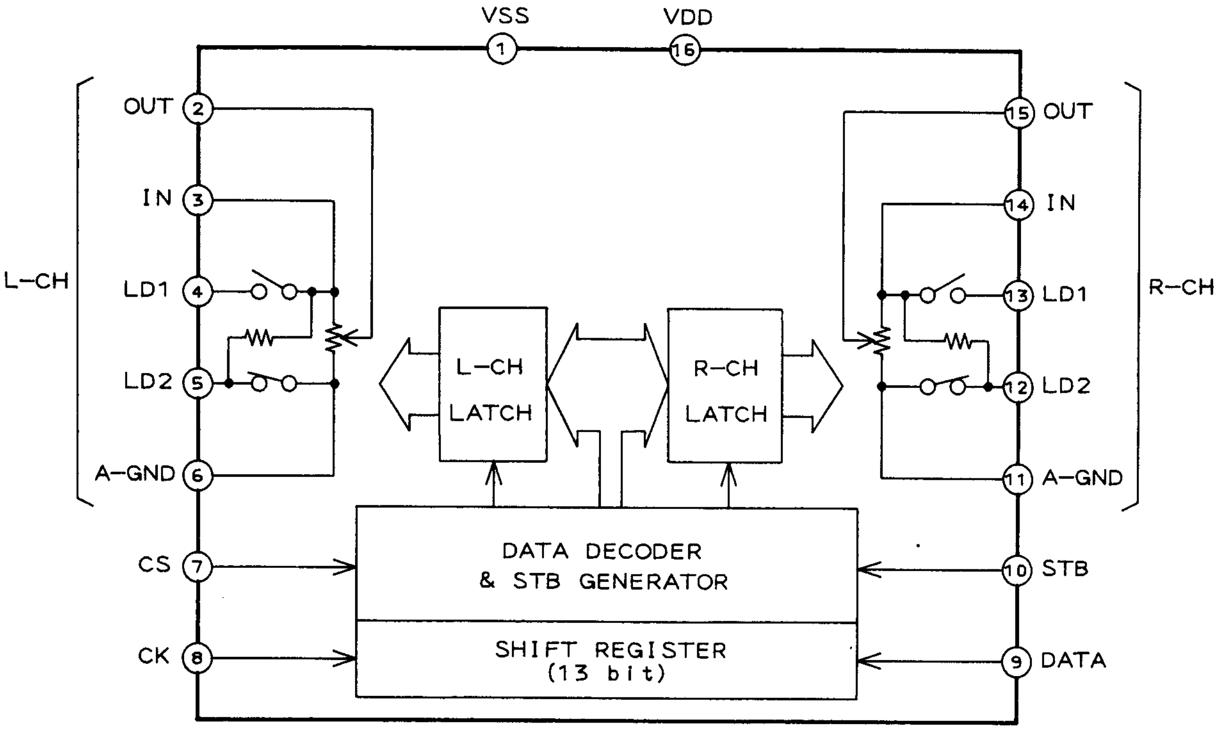
NJM2177A FB3 (DOLBY PRO LOGIC SURROUND DECODER)


L-AB-IN 9
R-AB-IN 18
×1
×1
INPUT BUFFER
INPUT AUTO-BALANCE CONTROL
NOISE SEQUENCER
V LR
V CS
ADAPTIVE MATRIX
L
R
C
BY-PASS LINE
7KHz LPF
MODIFIED DOLBY B N.R.
S
CENTER/ OPERATING MODE CONTROL
28 L-O
29 R-O
36 C-O
25 S-O
37 S.OUT
45 LP-I-I
44 LP-O
40 NR-IN
31 L-R O
30 L+R O

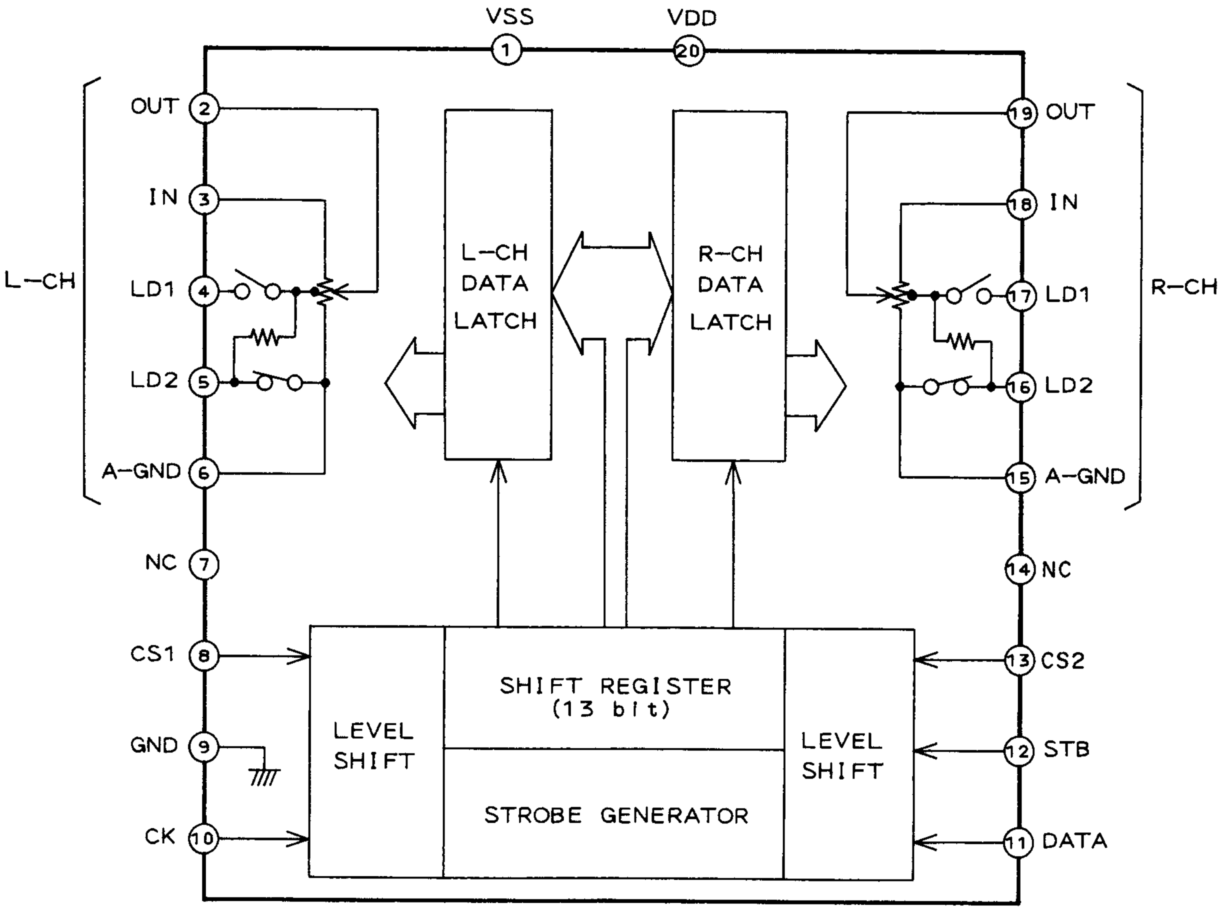
SAA6579T (RDS DEMODULATOR)

PIN No	PORT NAME	I/O	FUNCTION
1	QUAL	O	QUALITY INDICATION OUTPUT
2	RDDA	O	RDS DATA OUTPUT
3	VREF	—	REFERENCE VOLTAGE OUTPUT
4	MUX	I	MULTIPLEX SIGNAL INPUT
5	VDD	—	+5 V SUPPLY VOLTAGE FOR ANALOG PART
6	VSS	—	GND FOR ANALOG PART
7	CIN	I	SUBCARRIER INPUT TO COMPARATOR
8	SCOUT	O	SUBCARRIER OUTPUT OF RECONSTRUCTION FILTER
9	MODE	I	OSCILLATOR MODE / TEST CONTROL INPUT
10	TEST	I	TEST ENABLE INPUT
11	VSS	—	GND FOR DIGITAL PART
12	VDD	—	+5 V SUPPLY VOLTAGE FOR DIGITAL PART
13	OSC1	I	OSCILLATOR INPUT
14	OSC0	O	OSCILLATOR OUTPUT
15	T57	O	57 kHz CLOCK SIGNAL OUTPUT
16	RDCL	O	RDS CLOCK OUTPUT

TC9260P (ELECTRIC VOLUME CONTROL)


VSS
VDD
1
16
L-CH
OUT 2
IN 3
LD1 4
LD2 5
A-GND 6
CS 7
CK 8
L-CH LATCH
R-CH LATCH
DATA DECODER & STB GENERATOR
SHIFT REGISTER (13 bit)
15 OUT
14 IN
13 LD1
12 LD2
11 A-GND
10 STB
9 DATA
R-CH

TC9412P (ELECTRIC VOLUME CONTROL)


VSS
VDD
1
20
L-CH
OUT 2
IN 3
LD1 4
LD2 5
A-GND 6
NC 7
CS1 8
GND 9
CK 10
L-CH DATA LATCH
R-CH DATA LATCH
LEVEL SHIFT
SHIFT REGISTER (13 bit)
STROBE GENERATOR
LEVEL SHIFT
19 OUT
18 IN
17 LD1
16 LD2
15 A-GND
14 NC
13 CS2
12 STB
11 DATA
R-CH